15 CENTS A COPY

THE OIL WEEKLY

Devoted Exclusively To The Production and Transportation of Oil and Gas

Engineering News Statistics

A Catcher's Job!

) ALONE

and unassisted, thousands of feet below the surface, a tubing catcher must act when the string breaks.

BJ *Surestop*

TUBING CATCHER

SIMPLE—only ten parts.

LARGE SLIP AREA—2½ to 3-times the area of any other type of catcher.

QUICK ACTION—sets and holds in a 2-inch drop.

STRONG—One-piece seamless hydraulic steel tubing body...stronger than any other part of the tubing string.

BYRON JACKSON CO.

Established 1872

General Offices: 2150 East Slauson Ave., Los Angeles, Calif.

Mid-Continent Office: 215 East Archer St., Tulsa, Oklahoma

Export Office: 1245 Graybar Bldg., New York, N. Y.

Write for complete information

November 7, 1930

ADVERTISERS INDEX, LAST PAGE

EDITORIAL INDEX, PAGE 37

Machine

CURVED

at the

MILL

versus:

Seventeen ROUGHNECKS *and a* MULE!

Ever lend a hand to bending a piece of inch-thick, foot-wide, flat asbestos brake lagging to a brake drum end? It's the derrick floor job roughnecks invented cussing to help them handle.

Because it does take seventeen roughnecks and a mule to bend a piece of stiff, flat brake lagging to a drum end, drilling crews all over the country have fallen hard for genuine Johns-Manville *machine curved lagging*. All they have to do is lay it on the drum end, drill the holes and set up the lagging screws. No "C" clamps, no straining, puffing, sweating, cussing. An apple-pie cinch compared to handling flat-type lagging.

Moreover, there's no danger of breaking *machine curved* lagging, as often happens in the case of hard, flat lagging. As for wear, and real braking capacity—who leads Johns-Manville in asbestos products of any kind?

Made and stocked in sizes for every draw-works, from 3/8″ x 3½″ for winches, to 1″ x 12″ for the heaviest draw-works. No matter what make machine you have, we can fit it with *machine curved* Johns-Manville Brake Lagging. At Word's exclusively in the Gulf Coast.

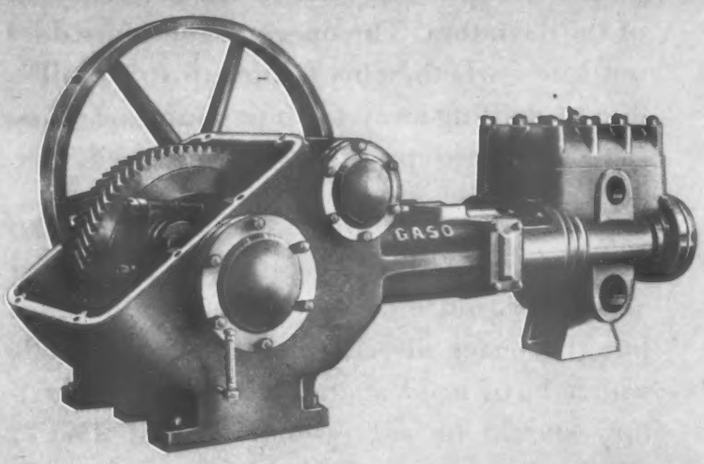
The Best Known WORD in the Oil Business

T. T. Word Supply Co., Inc.

Lake Charles — BOX 276 — HOUSTON — Shreveport — Seguin

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879

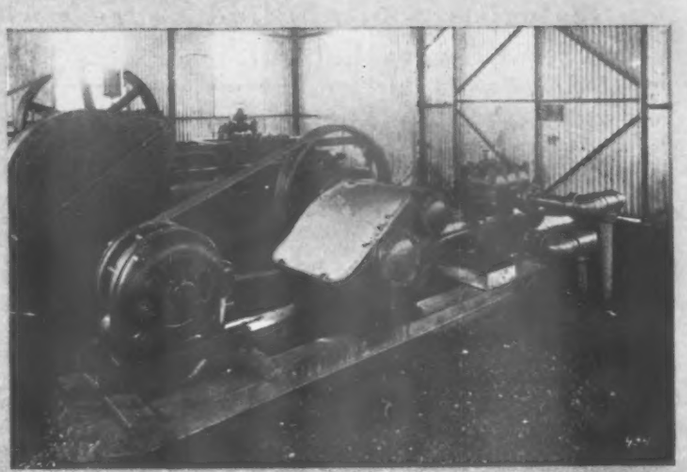
Smooth and Efficient Transmission of Power



Like the steadily pulling legs of a team of horses, the Continuous Tooth Herringbone Gears in the Gaso Fig. 1508 Pump transmit power with extreme smoothness. *These gears are 98.9 to 99.4% efficient.* Other features which contribute to unique efficiency in this group are: a constant flood of clean oil on all moving parts; and Timken Tapered Roller Main and Pinion Bearings.

Send your requirements for detailed data on Gaso Pumps for any purpose

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma
Dallas, Texas New York, N. Y.



Left—A Gaso Fig. 1508 Enclosed Power Pump with V-rope drive from electric motor. This pump is also popular in a compactly mounted skidded unit with V-rope drive from Buda 50 H.P. Gas Engine. Or it can be arranged for belt drive, direct connected to engine through flexible coupling, or for motor drive through silent chain or reduction gears.

Interchangeable Liner Fluid End gives capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 250 lbs. pressure.

GASO PUMPS

for every oil industry need

SURWEL Clinograph

Surveys direction and degree of deviation

ONE of the most progressive steps in drilling operation is the well survey—safeguarding the driller from too great a deviation from the vertical. Unfortunately for wells already drilled such surveys do not go far enough. They fail to tell the *direction* of the deviation. The operator therefore does not know whether his failure to strike oil is due to drifting away from pay sand or crossing into close proximity to another well.

Now comes the SURWEL CLINOGRAPH, an instrument that tells photographically and accurately, not only the degree of deviation but the exact direction of the drift. Wells which have been abandoned in likely territory should be surveyed by the SURWEL. Geologists, too, will find a survey with SURWEL very helpful.

SURWEL is not sold but operated on a service basis by our own experienced crew. Costs and complete data will be given on request.

SPERRY-SUN WELL SURVEYING CO.

Main Office—1608 WALNUT STREET, PHILADELPHIA

DALLAS, TEXAS
1504 First National Bank Bldg.

TULSA, OKLAHOMA
402 Petroleum Building

HOUSTON, TEXAS
1420 Esperson Building

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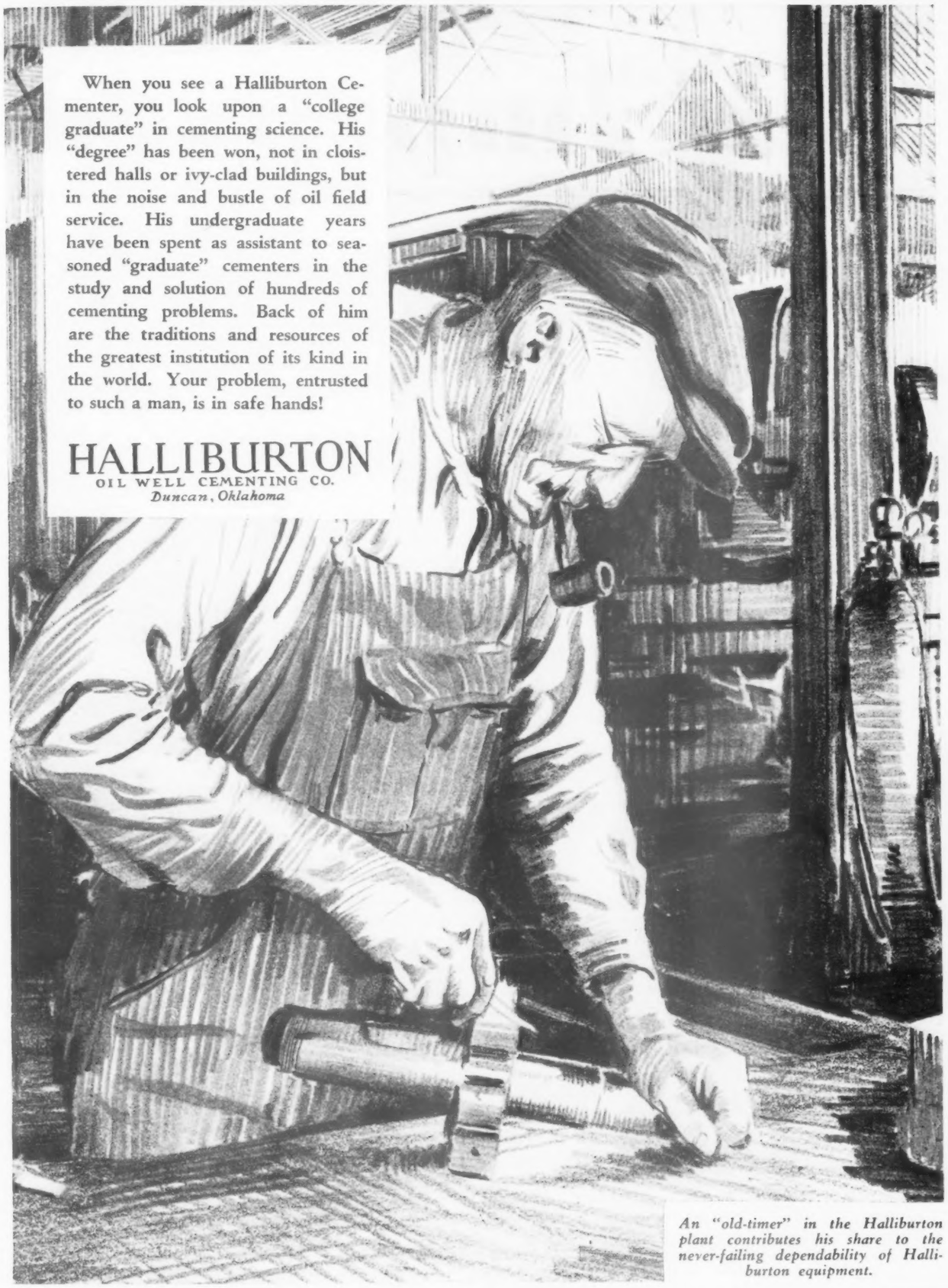
415 Petroleum Securities Bldg.



When you see a Halliburton Cementer, you look upon a "college graduate" in cementing science. His "degree" has been won, not in cloistered halls or ivy-clad buildings, but in the noise and bustle of oil field service. His undergraduate years have been spent as assistant to seasoned "graduate" cementers in the study and solution of hundreds of cementing problems. Back of him are the traditions and resources of the greatest institution of its kind in the world. Your problem, entrusted to such a man, is in safe hands!

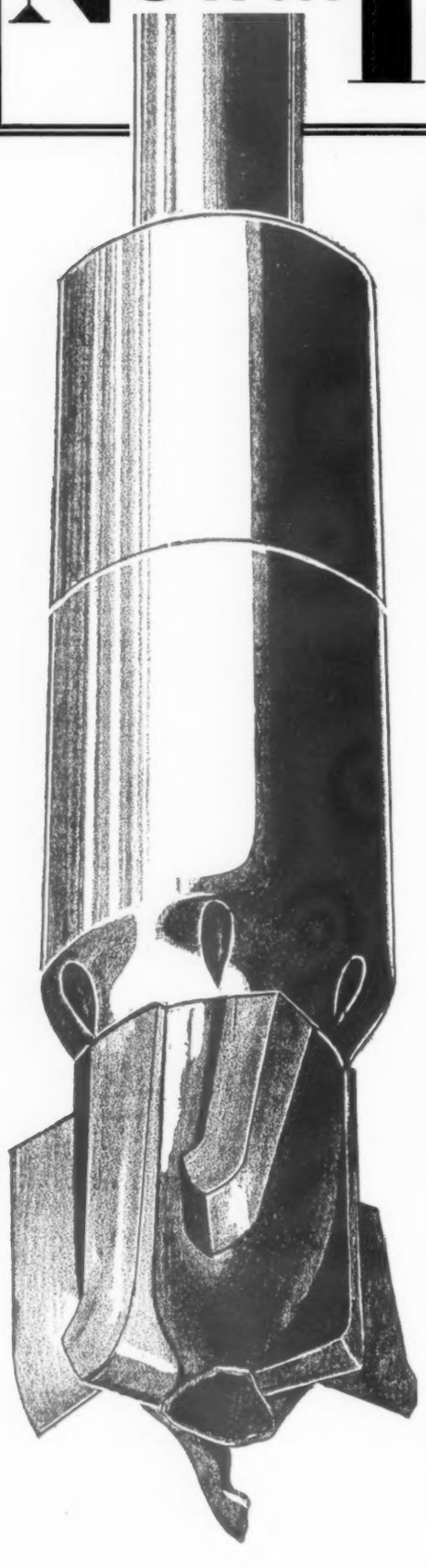
HALLIBURTON
OIL WELL CEMENTING CO.
Duncan, Oklahoma

An "old-timer" in the Halliburton plant contributes his share to the never-failing dependability of Halliburton equipment.

Would you, as a reader of The Oil Weekly, like to receive copies of THE CEMENTER as issued? Each number contains interesting information about cementing and drilling fluids. There is no cost or obligation—simply sign your name below and mail to Halliburton Oil Well Cementing Co., Duncan, Oklahoma.

Name ..... Address .....

Now... Improved



Perfection Core Barrel

Your circulation is directly on the cutting edge of the bit in the new Type "M" Perfection Core Barrel. Keeping the cutting edge cool means more hole through hard formations. Any type "C" Perfection Core Barrel can be made into Type "M" by changing over to Type "M" bit body, which we will furnish free to any owner of Type "C" Barrel.

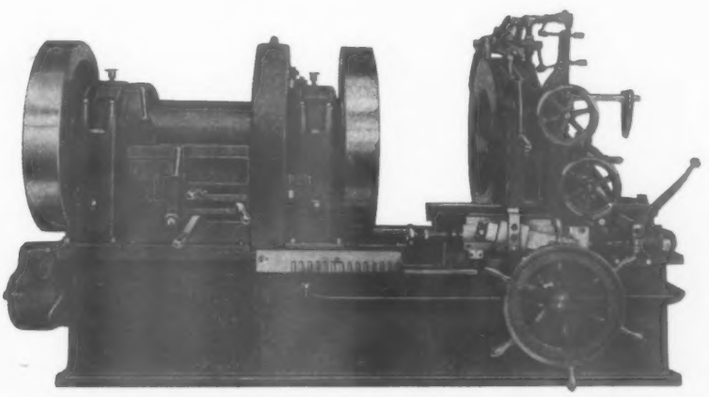
Other Brewster Products...

Include A. P. I. Shouldered Tool Joints; Perfection Core Barrels; Chrome Nickel Drill Collars; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations — hard formation cutter heads are faced with a substance of diamond-like hardness.

The Brewster COMPANY~INC.
Shreveport,Louisiana

COMPLETE STOCK carried at these warehouses: Iverson Specialty Co., Oklahoma City, phone 2-2833; Houston Store, 2000 Harrington St., phone Capitol 3021. *Distributors:* Wilson Supply Co., Houston, Beaumont and Luling, Texas; Continental Supply Co., all stores; Murray-Brooks Hardware Co., Lake Charles, Louisiana; T. T. Word Supply Co., Houston, Texas, and Lake Charles, Louisiana; El Dorado Foundry, Machine & Supply Co., El Dorado, Arkansas.

The New Landis Makes Friends with SEAMLESS TUBING



The Landis Pipe Threading and Cutting Machine with Receding Chaser Two-Cut Die Head and Lead Screw

The new Landis gets along just fine with SEAMLESS because of its taper mechanism and lead screw.

It also makes friends with the users of seamless tubing because of its extreme accuracy, real economy and high production possibilities.

This new machine insures

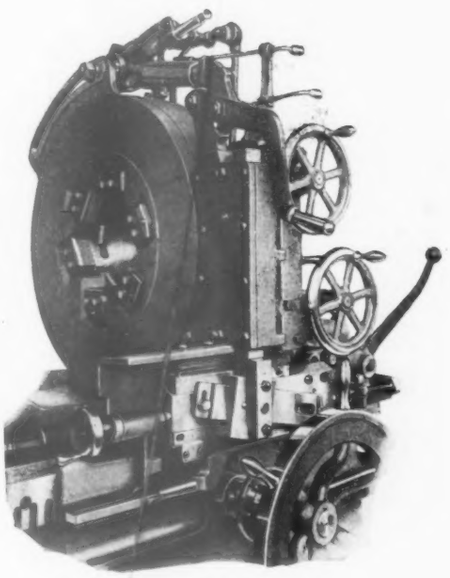
A *perfect start* of the thread and an *accurate lead.*

A *straight line taper* which is accurate and uniform.

A *long chaser life* between regrinding.

A *lower power consumption.*

The *maximum threading speeds.*



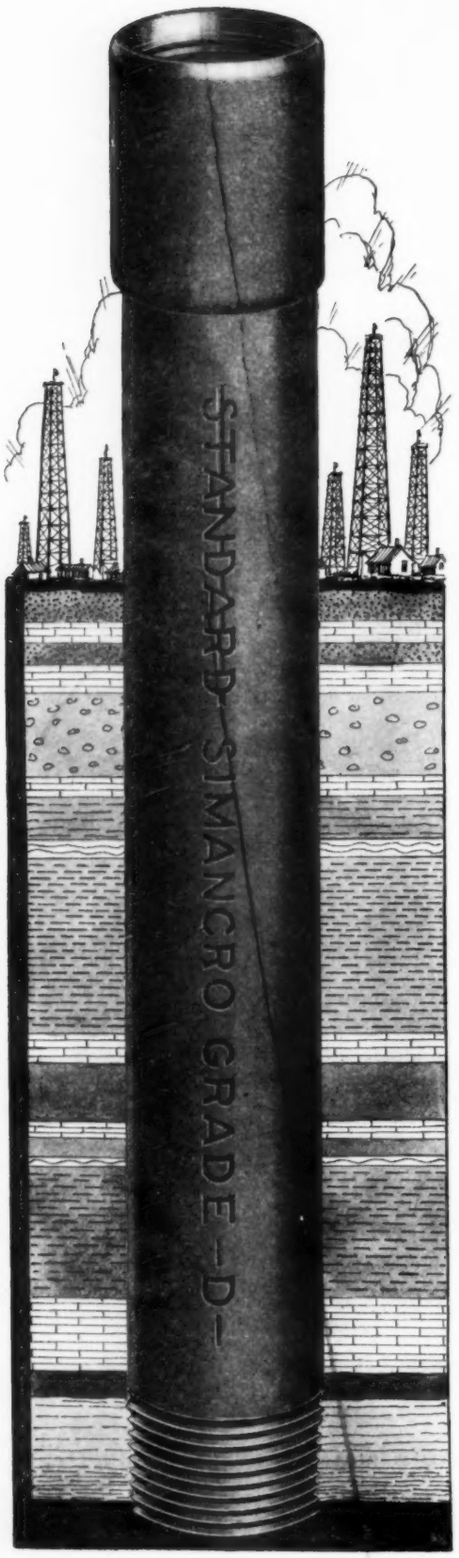
Taper Mechanism

A copy of Bulletin C-77 for complete information.

LANDIS MACHINE COMPANY, Inc.

Waynesboro, Penna., U. S. A.

Represented in the domestic oil fields by: Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston and Dallas, Texas; Woodward Wight & Co., New Orleans, La.; Herberts Machinery Co., Ltd., Los Angeles, Calif.; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.



DOWN!
DOWN!
DOWN!
Goes
SIMANCRO

New depths and new oil treasures are being safely reached with "Simancro"—the super-casing made especially for modern, deep drilling service.

"Simancro" is an alloy steel casing—an outstanding achievement in the art of modern metallurgy—so strong that you can drill to considerably greater depths than the limits of regular seamless casing and still enjoy the same factors of safety. Available in 95,000 pounds and 110,000 pounds minimum tensile grades.

There is only one "Simancro"—an exclusive product of this company—specify it for utmost safety and dependability in deep drilling.

SPANG, CHALFANT & CO., INC.

General Offices: CLARK BUILDING, PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. *Seamless Mills:* AMBRIDGE, PENNA.

SINCE 1828

SPANG WELDED *and*
STANDARD SEAMLESS
OIL COUNTRY TUBULAR PRODUCTS

An EPCO Pump

Brings Assurance

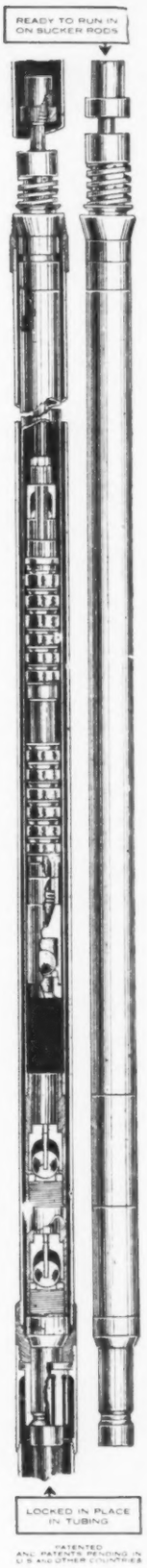
of

MAXIMUM PRODUCTION

at

MINIMUM COST

A FACT to which thousands of producers thruout the world will testify. There's more than one reason » » » EPCO WILL HELP YOU TOO!



"Economy is Right"

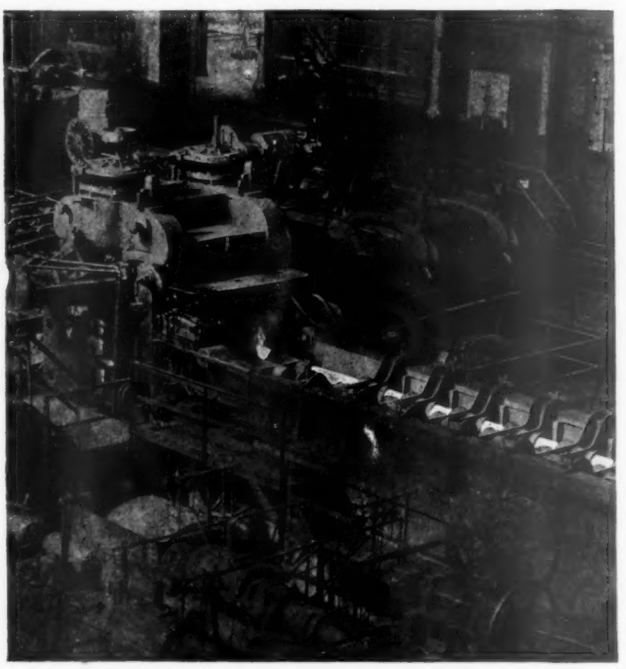
The Economy Pump & Oil Tool Co.

Offices and Factory: 4424 E. 49th St., Los Angeles, Calif., U. S. A. Office and Warehouse: Ft. Worth, Texas. Representatives at Tulsa, Bristow, Ponca City, Duncan, Seminole and Earlsboro, Oklahoma; Fort Worth, Beaumont, Big Spring and Houston, Texas; Shreveport, Louisiana; also Representatives and distributing points at Long Beach, Huntington Beach, Santa Fe Springs, Taft and Bakersfield, California. or any National Supply Company Store throughout the world.

DISTRIBUTED BY
THE NATIONAL SUPPLY COMPANIES

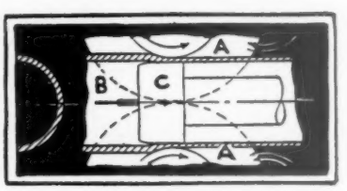
J & L SEAMLESS

Produced under Finest Control in the Heaviest Plug Mills in Existence

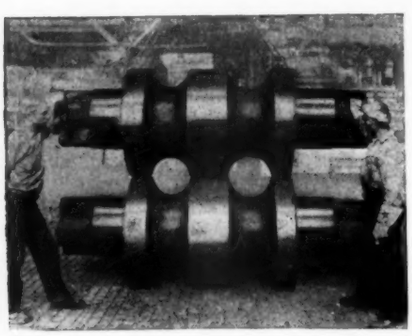


The picture shows one of the powerful J & L plug mills, the largest and heaviest in existence.

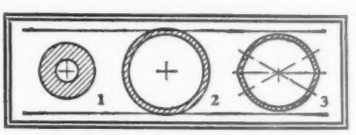
FACILITIES of J & L for making Seamless Casing, Tubing and Drill Pipe of highest quality are unsurpassed. For instance, J & L employs the heaviest plug mills in existence for producing all sizes of seamless from 2⅜" O.D. to 13⅜" O.D. By using this extra heavy equipment J & L has reduced detrimental vibration to a minimum, and has obtained as nearly perfect control as possible over an operation highly important to making seamless of superior quality. In the plug mill a denser steel structure and the correct weight per foot are obtained as the tube is rolled to approximately the exact wall thickness. The more thoroughly the plug mill does its work the greater will be the endurance and dependability of the finished pipe.



Sketch of plug mill operation in seamless manufacture. "A" are the rolls, "B" is the tube, and "C" is the plug over which the tube is rolled.



The picture at the left indicates the giant size of the rolls employed in the J & L Seamless Pipe plug mills.



Development of cross-section of J & L Seamless Pipe: 1. After first piercing; 2. After second piercing; 3. After plug mill rolling.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

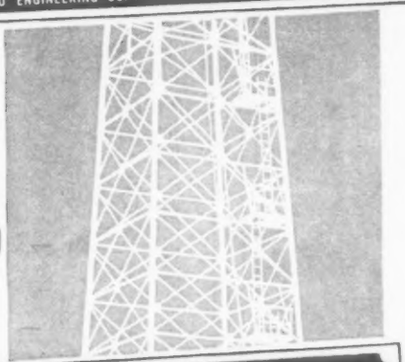
J&L STEEL

Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized.

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products.

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

DATE OF DERRICK SPECIFICATIONS JANUARY 1929
EMSCO SERIAL NO 18B-GA48 SIZE 18-B WEIGHT 34059 LBS.
HEIGHT 136 FT. BASE SQUARE 26 FT 0 IN. TOP OPENING 5 FT 8 IN.
A.P.I. DEAD LOAD CAPACITY WITHOUT LEG REINFORCING 397932 LBS.
A.P.I. DEAD LOAD CAPACITY WITH LEG REINFORCING 660372 LBS.
LEG REINFORCING SIZE 5 IN. 15 LB. PIPE
A.P.I. WIND LOAD CAPACITY 70 MILES PER HOUR
A.P.I. GIN POLE CAPACITY 10000 LBS.
EMSCO DERRICK & EQUIPMENT COMPANY
HOUSTON, TEXAS LOS ANGELES, CAL. DALLAS, TEXAS
THE EMSCO ENGINEERING COMPANY LTD., LONDON, ENGLAND



THIS EMSCO A.P.I. DERRICK HAS SPECIAL HIGH GRADE STEEL AND HEAT TREATED BOLTS THRUOUT. THE A.P.I. SAFE LOAD CAPACITY IS BASED ON USE OF ORDINARY GRADE STEEL. BY THE USE OF SUPERIOR STEELS AND BOLTS AND INCREASING THE UNIT STRESSES IN DIRECT RATIO TO THE A.P.I. CODE EMSCO RATES THIS DERRICK WITH A CONSERVATIVE SAFE LOAD OF 596900 LBS. UNREINFORCED AND 1069292 LBS. REINFORCED WITH 5 INCH 15 LB. EMSCO SPECIAL PIPE
EMSCO DERRICK & EQUIPMENT COMPANY
HOUSTON, TEXAS LOS ANGELES, CAL. DALLAS, TEXAS
THE EMSCO ENGINEERING COMPANY LTD., LONDON, ENGLAND

In the EMSCO HI-TEN DERRICK

you get this

full API specifications for derricks of each classification as adopted as standard by the American Petroleum Institute.

plus this

Emsco special Hi-Ten steel and bolts throughout, which give a safe load capacity that is approximately 50% in excess of API specifications.

Read and compare API and Emsco specification plates. Write us for detailed information on Emsco Hi-Ten the super derrick.

EMSCO DERRICK & EQUIPMENT CO.

6701-7101 S. Alameda St. Los Angeles, California

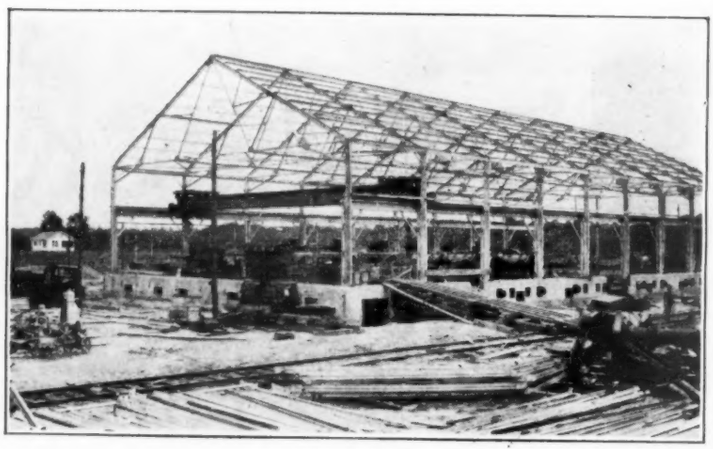
Export Office:
CONTINENTAL EMSCO COMPANY, INC.
74 Trinity Place, New York City

All Emsco and D+B Products (Except Derricks) Sold Exclusively in Mid-Continent Fields by The Continental Supply Company.

PRACTICAL FIELD METHODS

Make Quick Work of

PIPE LINE CONSTRUCTION



ANY TYPE OF CONSTRUCTION

River Crossing Compressor Stations Pipe Line Construction of any type - - - anywhere. » » » » »

The Natural Gas Engineering Corporation is composed of men whose long experience qualifies them for any type of construction. » »

NATURAL GAS ENGINEERING CORP.

PIPE LINE CONSTRUCTION

GENERAL OFFICES:
Oklahoma Natural Building ❖ ❖ ❖ Box 2047
TULSA, OKLAHOMA

The Secret of Strength, Stability and Safety--

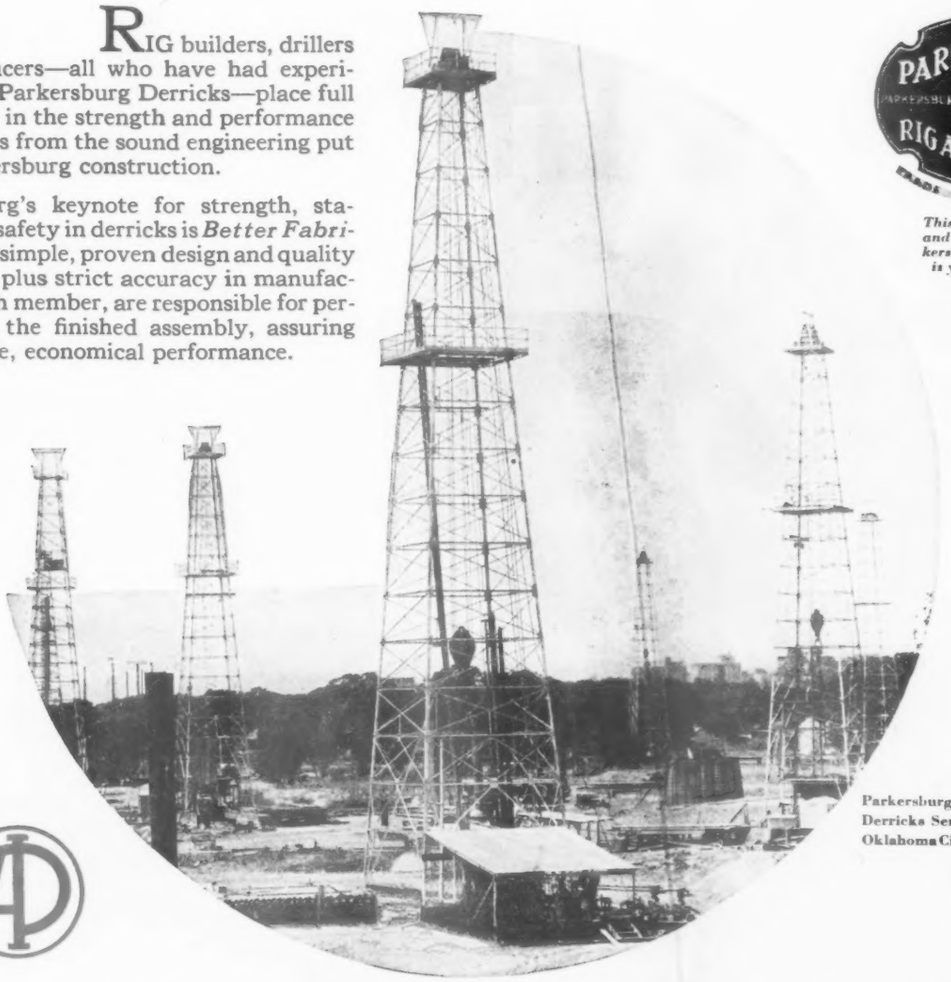
"BETTER FABRICATION"

RIG builders, drillers and producers—all who have had experience with Parkersburg Derricks—place full confidence in the strength and performance that results from the sound engineering put into Parkersburg construction.

Parkersburg's keynote for strength, stability and safety in derricks is *Better Fabrication*. A simple, proven design and quality materials, plus strict accuracy in manufacturing each member, are responsible for perfection in the finished assembly, assuring dependable, economical performance.

THE PARKERSBURG RIG AND REEL CO. PARKERSBURG WEST VIRGINIA QUALITY SERVICE TRADE MARK REGISTERED

This Mark of Quality and Service on Parkersburg Equipment is your Guarantee



Parkersburg A. P. I. Derricks Serving in Oklahoma City Field

Simplicity of Design Adds to Speed and Ease of Erection--

Accurate shop fabrication means fast field erection. Parkersburg fabrication and use of patented one-wrench Slot Bolts provide quick but secure bolting of joints. These bolts, fitting snugly in their slots, cannot turn. There is 50 per cent less chance of their loosening.

Uniform, interchangeable legs, forming complete butt-to-butt contact, remove shear strain from bolts and carry the load straight down the derrick leg like a single column of steel.

The same Quality and Service which distinguishes all Parkersburg Equipment inspires the confidence of oil men everywhere in the performance of Parkersburg Derricks. The nearest Parkersburg representative will gladly give you further details.

THE PARKERSBURG RIG AND REEL COMPANY

Main Offices and Works

PARKERSBURG, WEST VIRGINIA

NEW YORK - TULSA - FT. WORTH - HOUSTON

Branches In All Active Fields

178-A

HILL & FOSTER AUTOMATIC CATHEAD

Descriptive Bulletin No. 15A Sent on Request

THE NATIONAL SUPPLY COMPANIES

"6000" LINE
Heavy Duty

KEROTEST

VALVES & FITTINGS

Here is a new added line of Kerotest high pressure valves with approximately double the weight and strength of the standard drilling valves which makes possible safe, dependable drilling of the deepest wells of today.

Designed to withstand 6,000 pounds hydraulic pressure—subjected to the famous kerosene test and certified by the Pittsburgh Testing Laboratory, Kerotest "6000" valves and fittings are standardized and readily available through Kerotest distributors upon immediate demand.

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

Carried in Stock and Sold by NORVELL-WILDER SUPPLY COMPANY
Houston Beaumont-Lp Shreveport Fort Worth

OIL WELL SUPPLY COMPANY
Branch Stores and Offices throughout the world

Avoids SAND CUTTING

THE LAYNE

Keystone

WIRE WRAPPED MILLED GROOVE

Screen

WHY YOU SHOULD INSTALL THE "GREATER PRODUCTION" LAYNE MILLED GROOVE SCREEN:

Since ten to twelve wraps of wire pass over each *groove*, excessive production over the drilled holes is avoided as a uniform feed of the fluid through the outer openings of the screen is continually fed through the drilled holes from the entire surface of the screen. This avoids the possibility of "sand cutting," which is occasioned by excessive velocity of fluid entering at any one point.

Grooves are so spaced that the drainage distance between the Keystone Wires is very short, eliminating the possibility of openings becoming clogged with mud or sand.

The *Layne Milled Groove Screen* is oil industry's latest, greatest and most important invention and is the result of more than a quarter century's experience.

The Layne & Bowler Co.

Houston Texas

Install Milled Groove Instead of Wishing You Had

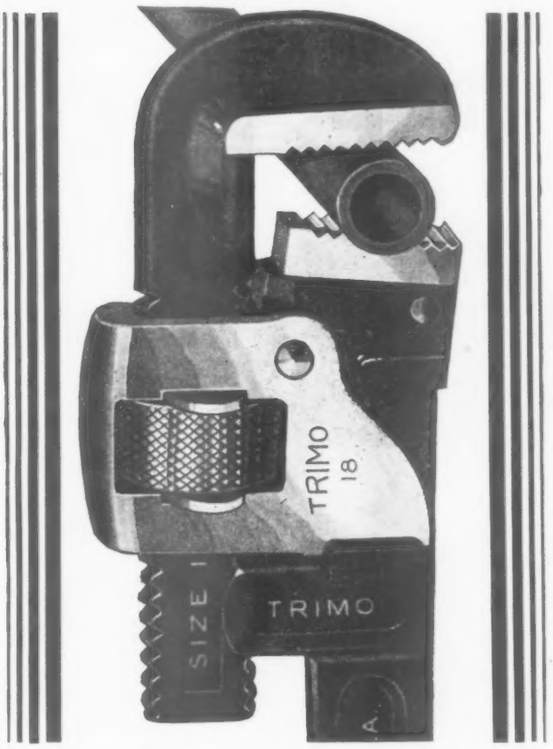
Write, wire or phone for quick service, catalogue, or further information.

The Layne New York Co., 30 Church St., New York

The Layne & Bowler Corp., Los Angeles, Calif.

Vickers, Limited, London, England

A QUARTER CENTURY OF EXPERIENCE AND DEVELOPMENT



If you could check over our orders

A SURVEY of our pipe wrench orders over a period of more than 40 years would show that peaks and valleys are no novelty in the development of the oil industry. Naturally we've sold more Trimo wrenches in good times.

But the most interesting fact—and it is as important to you as to us — is this: the outstanding favorite wrench to fill the oil man's needs has always been, and is today the all-steel, drop forged TRIMO. No stronger, safer, more serviceable pipe wrench is being produced.

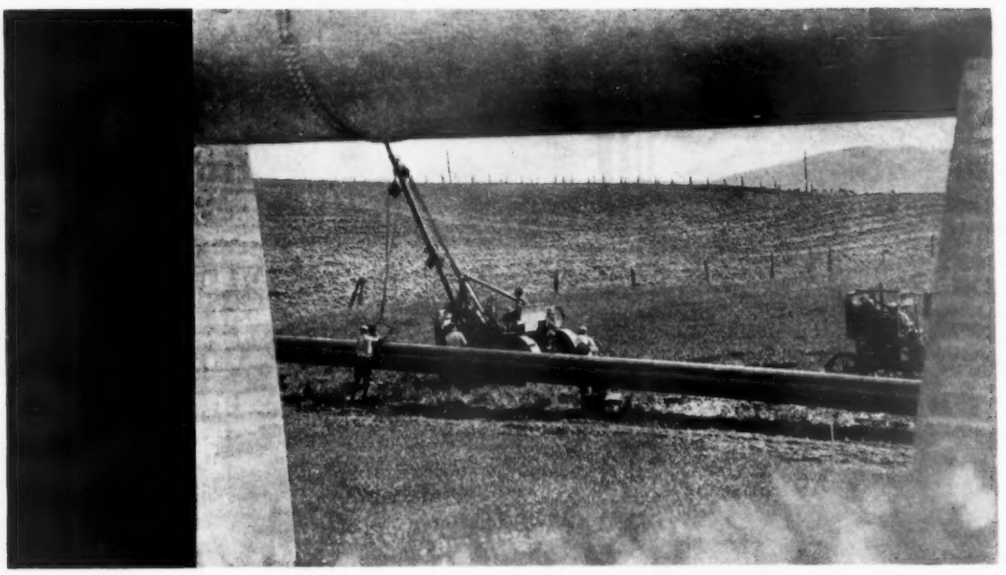
ALL STEEL TRIMO PIPE WRENCH

Handle drop forged - - - not cast

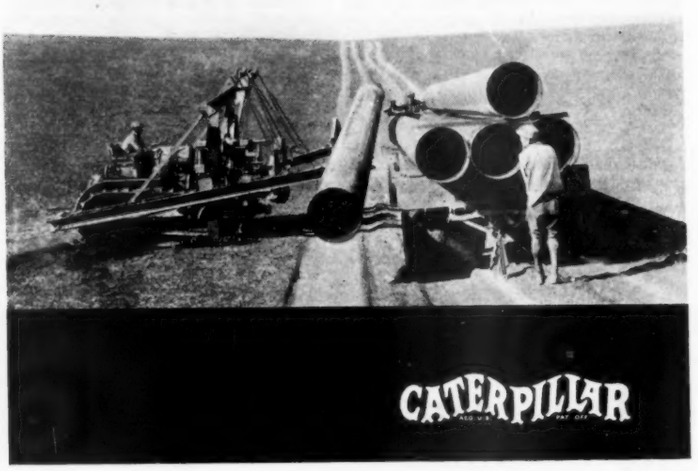
Made by Trimont Mfg. Co., Roxbury (Boston), Mass.

TRIMO

SPEEDING THE PIPE JOB



"CATERPILLAR" Tractors can be fitted with boom and tongs for handling pipe—with backfiller for filling the trench—and of course "Caterpillars" can haul the pipe and supplies over soft ground and up steep hills. There are other methods of handling pipe as the lower view indicates, showing a "Caterpillar" and Master Loader. Illustrated literature is yours for the asking.



Prices—f. o. b. Peoria, Illinois

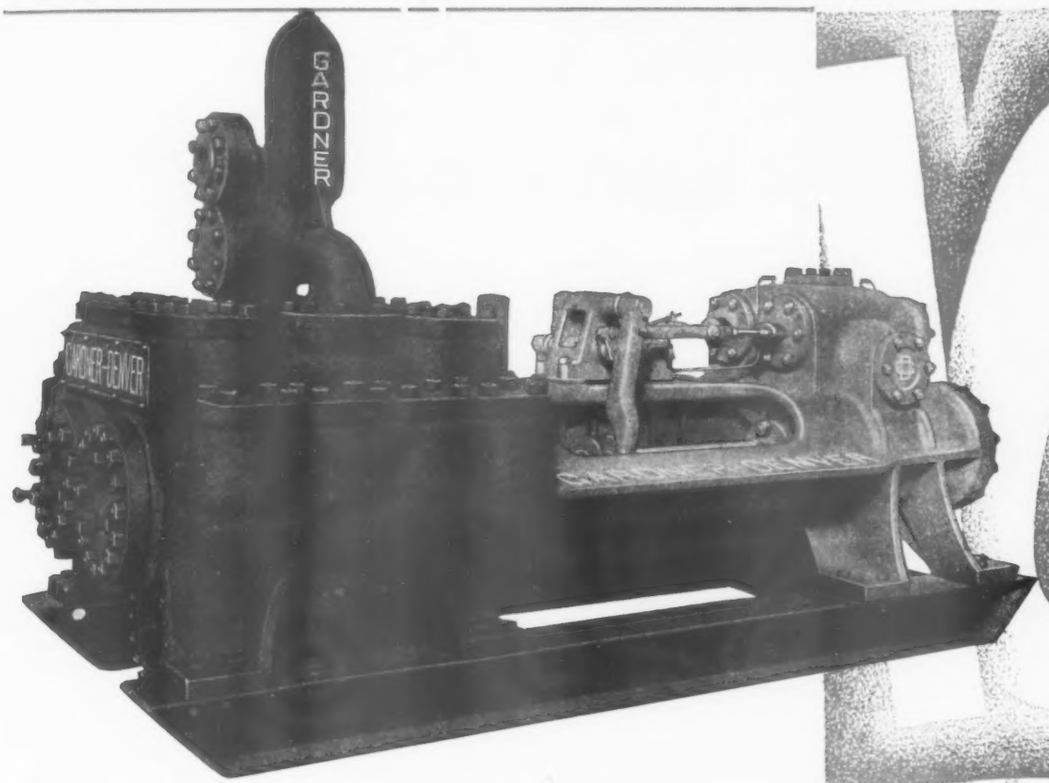
TEN	$1100
FIFTEEN	$1450
TWENTY	$1900
THIRTY	$2375
SIXTY	$4175

Caterpillar Tractor Co.
PEORIA, ILL. *and* SAN LEANDRO, CALIF., U. S. A.
Track-type Tractors Combines
Road Machinery
(There's a "Caterpillar" Dealer Near You)

The World's Largest Mud Pump
manufactured by

GARDNER-DENVER

LONGER LIFE—LOWER UPKEEP



16 VALVES

Sixteen Valves — Lighter, Stronger, More Durable

Divided Fluid End — Guaranteed 1500 Pounds Working Pressure

Steam End and Cradle Cast Integral (Perfect alignment)

350 Pound Steam End

Balanced Piston Valves

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TECPRO
Pipe Line Protective Coatings

TECPRO is a free-brushing, quick-drying COLD APPLICATION pipe protection; made of Asphalt and Bitumens properly blended to give a glossy, DUCTILE, WATER-PROOF, soil-proof coating to steel surfaces, and likewise possessing considerable dielectric properties.

TECPRO has been used for years by some of the largest pipe line operators in this country and its continued use by these companies is conclusive evidence that it has merit; its applications being checked and watched by the best Engineers available for this purpose.

TECPRO is readily applied by either brush or sling, and dries for handling within two to five hours, depending on humidity conditions. It has a coverage of about 150 square feet for the Medium and approximately 100 squa e feet per gallon for the Heavy and has a temperature range of over 150° Fahrenheit.

TECPRO is a strict blend of pure, selected Bitumens; not loaded with inerts; will not emulsify, in fact, just a clean, first-class product that does the work. It might be duplicated by anyone willing to use the same expensive raw materials and the same technical skill and control in processing, BUT IT IS NOT.

TECPRO brings to your pipe lines years of positive protection at a minimum initial cost.

TECHNICAL PRODUCTS INCORPORATED

Chemical Engineers Dallas, Texas

"SEE AMERICAN FIRST"

Popping a Snake's Head Off!

This Separator may be equipped with a special sand hopper bottom for use in fields where sand conditions are troublesome.

In yanking a snake, like a whip, one may pop its head off. It's just like the game of "Crack the Whip" whereby the force is increased down the line until the last boy is almost completely whirled about.

It is on this principle that the Improved AMERICAN Oil and Gas Separator whips every particle of oil from the gas, assuring complete separation, and BONE-DRY gas.

The B. S. & B. Spray Condenser, built with a series of passages, forces the gas, still wet, through a definite channel, and strips it of every globule of crude that remains in suspension in the on rushing gas. Thus no waste of oil!

The Improved American Oil and Gas Separator

Equipped with B. S. & B. Spray Condenser

This Separator is different and distinctive, due to its construction and its results. The construction, however, was not conjecture or chance—*it was engineered.* Every part and process was designed for a purpose and thoroughly tested under actual field conditions before being presented to the oil industry. A special Separator was built with glass windows to watch its performance and then a thorough field test was made to prove its efficiency and true value.

In addition to the B. S. & B. Spray Condenser and the inside tangential inlet, there is an oversized float inside the Separator, with a capacity ten times greater than the outside float. Then there are low fittings that save pipe material, and a convenience of hookup. And there are other factors and features worth your knowledge!

Look into an American Separator figuratively and literally. Let us present that opportunity. Just write Dept. AA9.

American Tank & Equipment Corp.

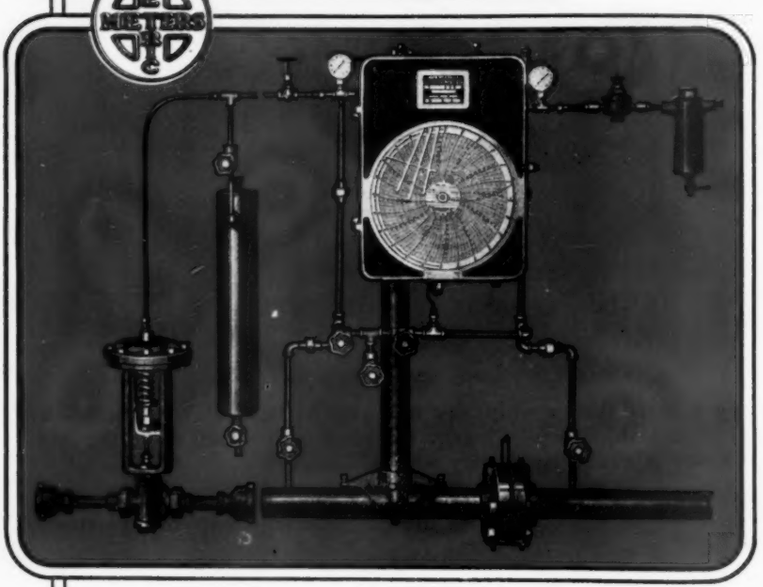
A SUBSIDIARY OF
BLACK-SIVALLS & BRYSON, Inc., Bartlesville, Okla.

OKLAHOMA CITY — OKLAHOMA

(Formerly AMERICAN TANK COMPANY)

METRIC Rate-Volume Controller

a Dozen applications indicate the wide range of important uses



THE Metric Rate-Volume Controller has been built solely to meet the problems in refining and in natural gasoline plants. The object has been to make constant control of *volume* as certain and as satisfactory as constant *pressure* control has been made by the use of the best designs of regulators.

Each type of service in the control of volume presents specifically different conditions that must be taken into account in designing the installation. The Metric Controller has been perfected for use through the widest range of refining processes. You can obtain a simple installation of the greatest reliability.

The list of applications will suggest instances where you could profitably install a Metric Rate-Volume Controller.

A new application of the controller is the proportional control of two liquids or gases, or a gas and a liquid. This application fills a long felt need for controlling the percentage volume of one liquid relative to the other.

Our store of experience in controlling flow is at your service. Inquiries should fully describe service conditions.

WRITE US FOR THE SPECIFIC DATA YOU DESIRE

AMERICAN METER CO
MEASUREMENT ENGINEERS
CUBIC FEET

Check the possibilities in your plant with these

ACTUAL REFINERY APPLICATIONS:

1. Controlling rate of oil charged to each crude distillation unit.
2. Controlling rate of oil charged to each cracking unit.
3. Controlling rate of oil charged to each steam still.
4. Controlling amount of steam used in steam still.
5. Controlling rate of crude medium to each tower.
6. Individual volume control of acid or caustic flow in connection with "continuous treaters", for light distillate such as gasoline.

AND NATURAL GASOLINE PLANT APPLICATIONS . . .

1. Controlling rate of flow of absorption oil sent to the absorbers
2. Controlling rate of flow of gas sent to the absorbers.
3. Controlling rate of flow of oil to the still.
4. Controlling rate of flow of lean oil from the still.
5. Controlling rate of flow of steam to the still.
6. Controlling rate of flow of oil charge to kettle in gasoline stabilization.

METRIC METAL WORKS
ERIE, PENNSYLVANIA
IRONCASE, TINNED-STEEL CASE and ORIFICE METERS

AMERICAN METER COMPANY
INCORPORATED
The World's Largest Manufacturers of Gas Meters and Allied Apparatus
ESTABLISHED 1836

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SKELLY

a new GASOLINE

by Skelly

Ethyl

on a base of AROMAX

All Ethyl drops are alike
ETHYL ON A BASE OF AROMAX

It's the base gasoline that counts
ETHYL ON A BASE OF AROMAX

Six cents extra value for only three cents extra retail cost
ETHYL ON A BASE OF AROMAX

Ethyl anti-knock joins Skelly quality
ETHYL ON A BASE OF AROMAX

The anti-knock fluid is the best made
ETHYL ON A BASE OF AROMAX

The base gasoline has stood out from the field
ETHYL ON A BASE OF AROMAX

The biggest money's worth in gasoline
ETHYL ON A BASE OF AROMAX

Try it at the nearest Skelly pump
ETHYL ON A BASE OF AROMAX

Do you want to stand out from competition?
IT'S THE BASE THAT BRINGS THE BUSINESS

Motorists can buy Ethyl most anywhere
IT'S THE BASE THAT BRINGS THE BUSINESS

All Ethyl drops are alike . . . all Ethyl gasolines are not
IT'S THE BASE THAT BRINGS THE BUSINESS

Do you want car owners to come back for more?
IT'S THE BASE THAT BRINGS THE BUSINESS

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SKELLY WITH ETHYL AROMAX
ETHYL ANTI-KNOCK COMPOUND
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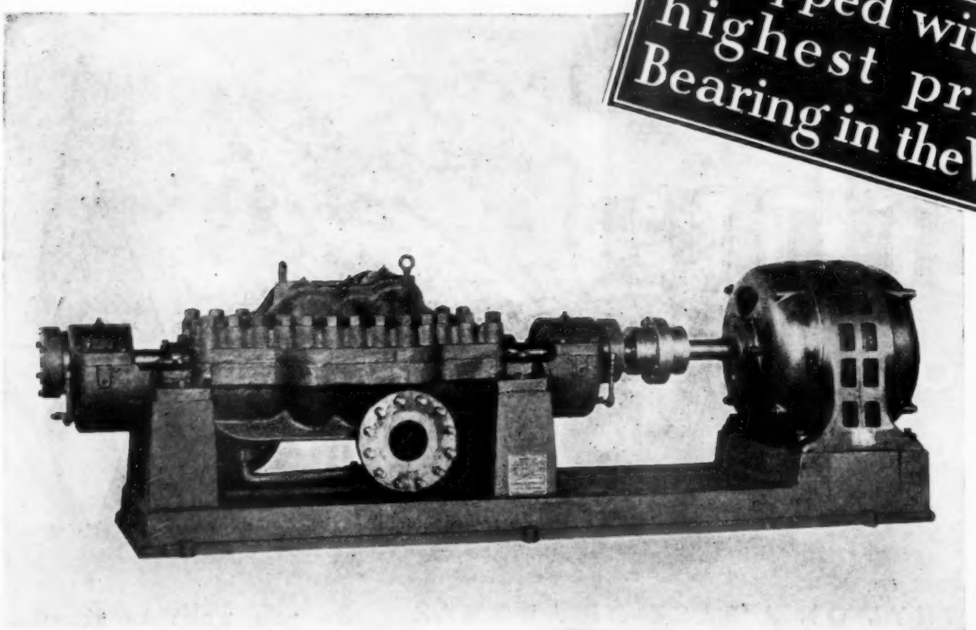
IT'S THE BASE THAT MAKES THE DIFFERENCE . . .
the Only Difference there can be

ANOTHER MANUFACTURER IN THE PUMP INDUSTRY THAT USES SKF BEARINGS

PACIFIC PUMP WORKS

Equipped with the highest priced Bearing in the World



PACIFIC USES SKF TO KEEP PUMPS AT HIGHEST EFFICIENCY IN REFINERY

PUMPS, too, have a very large field of usefulness in the oil industry. In many respects they are all-important for on their continued and unfailing operation definitely depend production and profits. With these factors in mind, the use of equipment where performance takes preference over price is a sound economic policy and accounts for the wide-spread adoption of SKF Bearings in this field.

For years, Pacific has used SKF Bearings to maintain the high standard of their pumps. Three units of the centrifugal pump shown are used for pumping gasoline by one of the important oil companies in their refinery near Los Angeles. Each has a capacity of 700 G.P.M. at 175 lbs. pressure. Four SKF Bearings are on the pump and, in addition, SKF's are on the 100 H. P., 440-volt Fairbanks-Morse Motor running at 1750 R.P.M. On this application SKF Bearings are a definite assurance that both pumps and motors will operate continuously at their highest efficiency.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y. 2622

EQUIPPED WITH THE HIGHEST PRICED BEARING IN THE WORLD

Means just this

SKF

Ball and Roller Bearings

That the manufacturers whose product is illustrated above preferred to pay more for their bearings and less for servicing or replacing them. They preferred to pay a higher price in the beginning than many times this higher price in the end. And, finally, they preferred to economize by using SKF bearings because they are made to do their job, not to fit a price list.

LUCEY A.S.M.E. BOILERS

STEAM
THE LIFE OF INDUSTRY

LUCEY

"WHEREVER THERE'S OIL"

Built to conform strictly to A. S. M. E. Code requirements and backed by our many years experience in building Oil Country Boilers. The confidence that is inspired by Lucey Boilers is unquestionably indicated by the vast number in service throughout the oil fields - - - particularly where excessive steam pressures must be maintained. - - - - - -

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DIESELS

FOR THE

OIL INDUSTRY

PIPE LINES—TANKERS—REFINERY

AMERICA'S OLDEST OIL ENGINE BUILDER—1893
PIPE LINE INDUSTRY'S FIRST OIL ENGINE—1907
AMERICA'S FIRST SOLID INJECTION DIESEL—1917
PREDOMINANCE IN THE FIELD —1930

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615 Mills Bldg., El Paso, Texas 1302 Lynch Bldg., Jacksonville, Fla.
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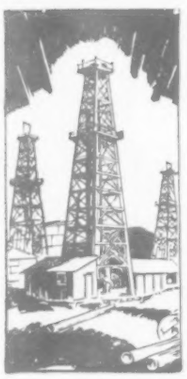
De La Vergne has been building 4 Cycle Solid Injection Engines since 1893.



If you want Service and Quality Casing, our oil field stock yards are equipped to make immediate shipment of most sizes of oil well casing, tubing and line pipe of a quality only possible by long experience and careful workmanship. . . . During the past 30 years we have received hundreds of testimonials about the quality and strength of our joints, the strength and uniformity of our material and the smooth and flawless appearance of the surface of our casing, tubing and line pipe. . . . We also specialize in double length line pipe 44′ to 48′ long—and are equipped to thoroughly descale and prepare line pipe for the final protective field coatings.

Chester also makes all classes of Genuine Wrought Iron Tubular Goods.

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STEEL CASING

SPECIALISTS IN CASING FOR DEEP WELL DRILLING

LINE PIPE

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
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ECONOMY... plus!

L. H. WENTZ
(OIL DIVISION)
PONCA CITY, OKLA.

July 22nd. 1930

Franklyn Valveless Engine Company,
Franklyn,
Pa.

Gentlemen:

For your information, in regards to [illegible] Gas Pumping Engines we have had in use since 1921, 3 Type X [illegible] Hp. Gas Engines on Band Wheel Towers. Two of these Engines have been running twenty four hours a day.

Over this period of nine years the above Engines have been giving excellent service with practically no repairs or shut down time.

We recently purchased 8 new 40 Hp. Type CC Engines, which are operating on beam units twenty four hours daily.

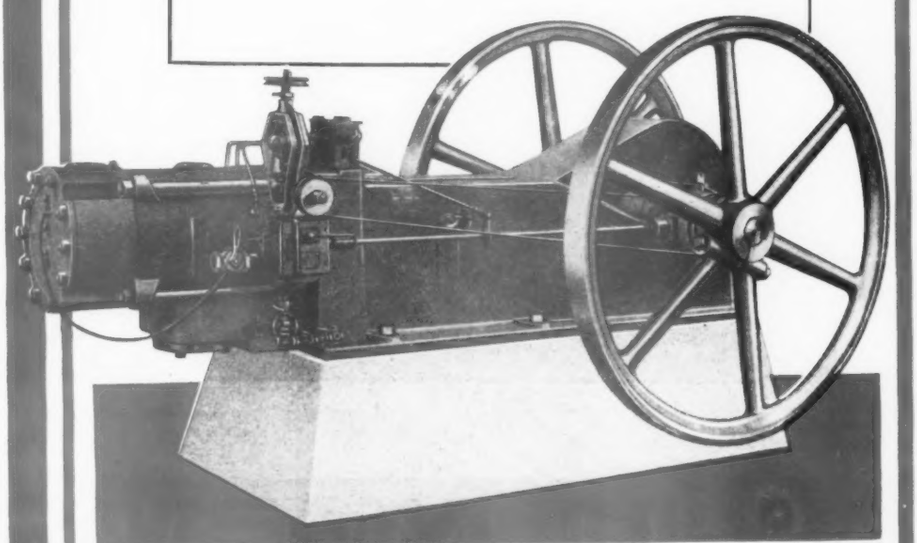
To date the Type CC Engines have been giving satisfactory service.

Youre very truly,

L.H. WENTZ, Oil Div.,

By: Chas Crouch
Superintendent

cab:cc



FRANKLIN VALVELESS O.G. PUMPING ENGINE

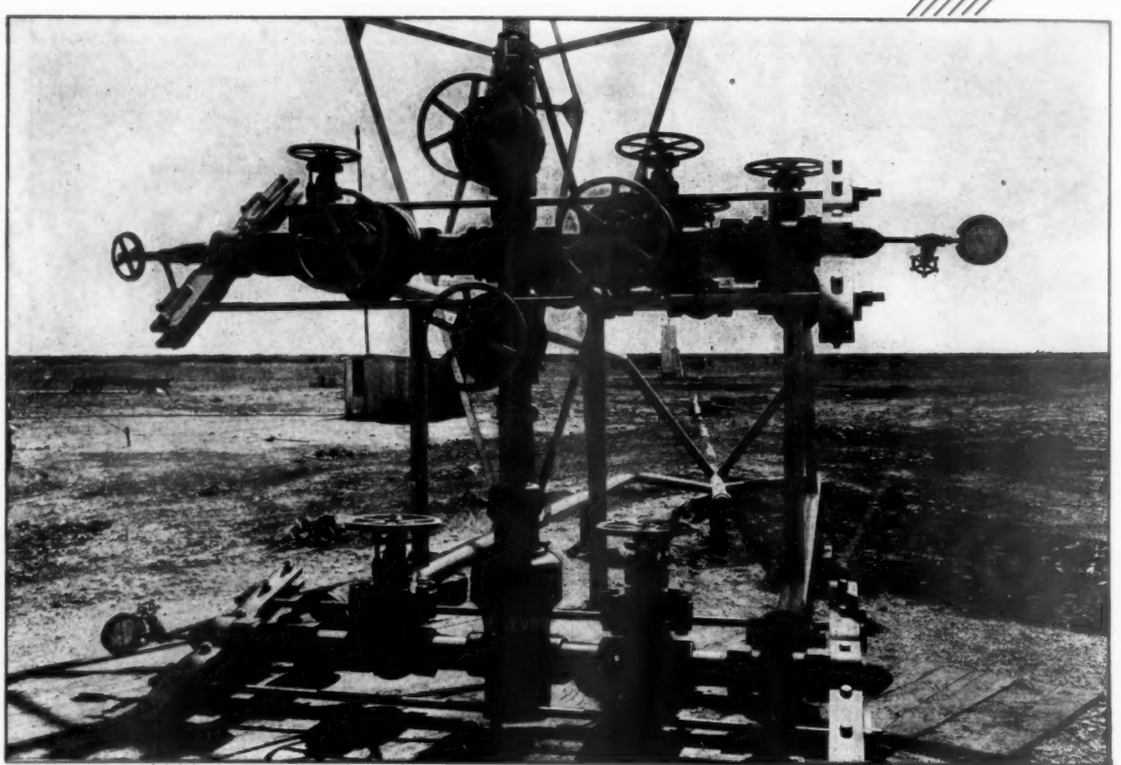
FRANKLIN VALVELESS ENGINE COMPANY
FRANKLIN, PENNSYLVANIA

Distributed by

OIL WELL SUPPLY CO.

McEVOY UNIVERSAL CASING CONTROL HEADS are LEADERS

in the
HOBBS
New Mexico Field

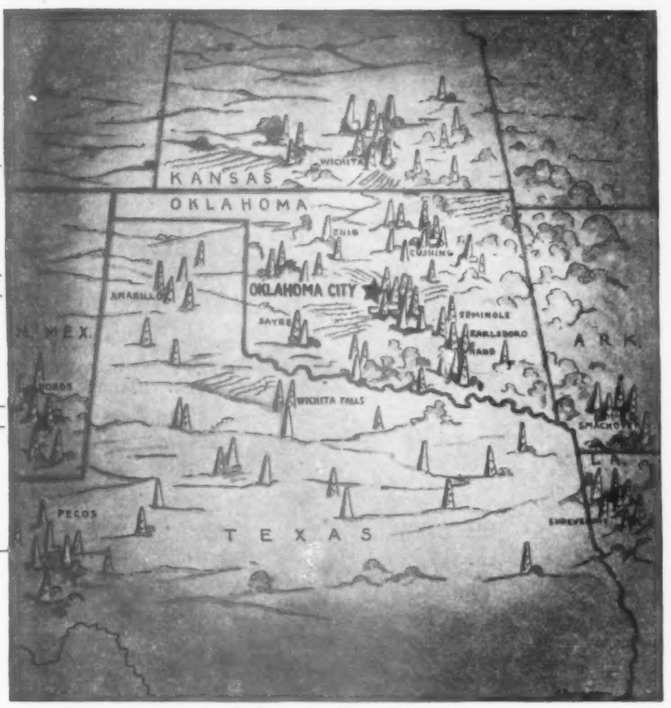


A typical McEvoy hook-up in the Hobbs Field

J. H. McEVOY & COMPANY
HOUSTON, TEXAS

PACIFIC COAST BRANCH: McEVOY SCREEN PIPE CO., 2428 E. 56 ST., LOS ANGELES, CALIF.

THE HUB OF THE OIL INDUSTRY



That grand old man whom we so often hear quoted—Noah Webster, says that the HUB is the center of a wheel or anything central. Truly Oklahoma City is the Hub of the oil industry.

Get a map of the Mid-Continent area. Follow the railroads, the bus lines and the air routes from Oklahoma City to ANY point in the entire Mid-Continent field. They radiate from Oklahoma City as from no other point in the territory.

Oklahoma City is actually from seven to twenty-four hours nearer to every major pool in the Mid-Continent area. Isn't this what you've been looking for in your service to this big producing area?

Dependable, economical electric power is available at attractive industrial rates. There is also a plentiful supply of both common and skilled labor.

There are many other reasons why Oklahoma City has gained for itself the title of "Wonder City." We will be glad to furnish you with specific information about the advantages offered for your Company.

Desirable

Oct. 23, 1930.

Chamber of Commerce,
Oklahoma City, Okla.

Gentlemen:

For several years our firm has contemplated locating a plant for the manufacture and distribution of our oil field products, somewhere near the center of the Mid-Continent area.

Several points were considered, and their advantages weighed, but developments during the last few years have, together with the other advantages offered, convinced us that Oklahoma City is the ideal location for a business of our kind. And we are glad to advise you that the activities of the Chamber of Commerce have been an important factor in selling us on Oklahoma City.

Oklahoma City has ample railroad facilities, which make it desirable as a shipping point, and good power rates, which make it desirable as a manufacturing point. Aside from that, living conditions are ideal, having excellent schools, churches, theatres, and many other facilities which make living pleasant.

Thanking you for courtesies extended us, we are,

Yours very truly,
VICKERS MACHINE WORKS, INC.
Orrin F. Matthews,
Secretary-Treasurer.

Oklahoma City Chamber of Commerce

OKLAHOMA CITY, OKLAHOMA

If you don't want a pumper, use AQUAGEL. Stops penetration of mud and water into producing sand.

AQUAGEL helps get all the oil. Reduces chances of cut oil. Saves money!

HOW LONG WILL IT BE BEFORE YOUR WELL IS A PUMPER? • • • •

AQUAGEL

guarantees that the production zone will not be mudded off . . .

In all low-pressure fields there is great danger that the initial production (and ultimate production) of the completed well will be greatly impaired and reduced by the intrusion of mud and water into the producing zone. In some cases, the water filtered from the drilling mud has penetrated the oil zone to such a distance that the wells could never be swabbed in and the holes had to be junked.

When the mud is conditioned with AQUAGEL, the colloidal nature of the AQUAGEL guarantees a minimum penetration of mud and water. It will be readily flushed from the wall of the hole and the **total** drainage area will be available for production.

AQUAGEL has many other advantages that are fully described in our Catalog. Ask for your copy today.

CALIFORNIA TALC COMPANY

837 JACKSON STREET . . . LOS ANGELES . . . CALIFORNIA

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TYLER

for Economy and Prompt Service

No matter what your tube problem is—we can supply your needs, promptly, exactly and economically.

BOILER TUBES MADE OF

COP-R-LOY
ARMCO INGOT IRON
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Write for interesting literature—and for information regarding your specific requirements.

THE TYLER TUBE & PIPE CO.
WASHINGTON, PA.

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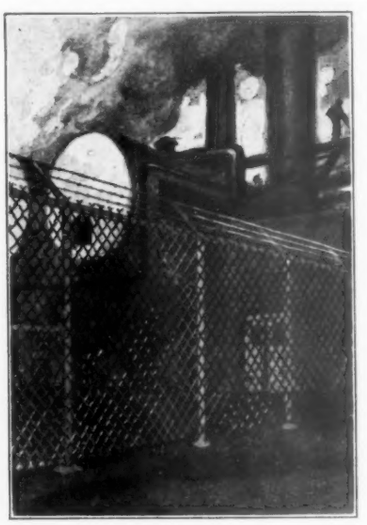
Lukens Steel Company, New Orleans, La.

BOILER TUBES



THERE are many reasons why oil men standardize on Cyclone Fence for enclosing refineries, tank farms, bulk stations and other oil property.

Cyclone Fence lasts many years because it is made of copper-steel heavily galvanized. Fabric is hot-dip galvanized by the "Galv-after" process developed by Cyclone. This process insures a smooth, dense coat of pure zinc. No chance for rust to start. Erected on H-column posts—the strongest and most durable posts made. Our own trained erection crews install Cyclone Fence everywhere. Write nearest offices for information.

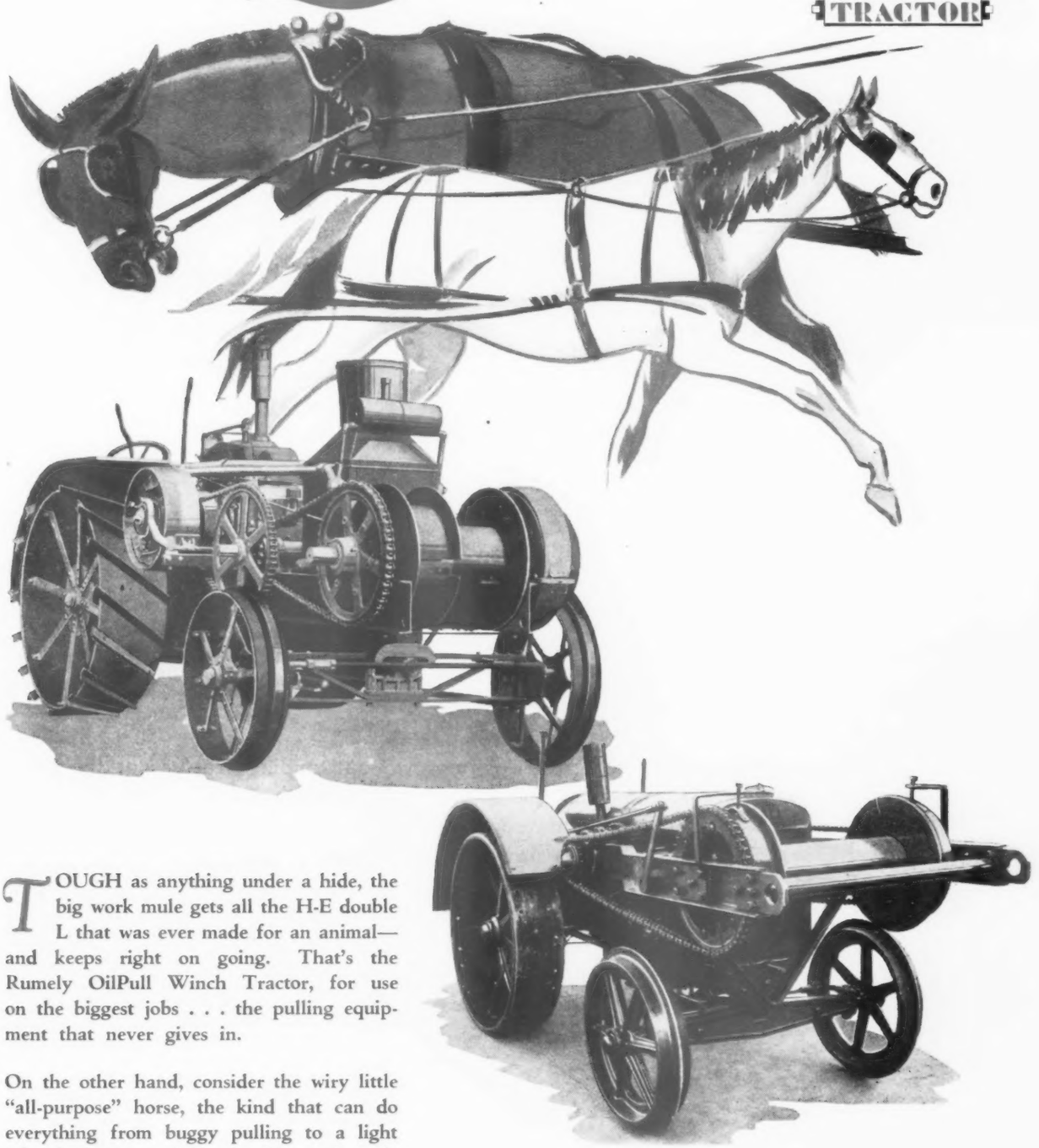
All chain link fence is not Cyclone. This name plate identifies the genuine Cyclone Fence

CYCLONE FENCE COMPANY
Subsidiary of United States Steel Corporation
Works and Offices: Fort Worth.
Direct Factory Branches and Warehouses: Houston, Dallas, Tulsa.
Also Sales Offices: New Orleans, Shreveport

Cyclone Fence
REG. U.S. PAT. OFF.

(c) C. F. Co. 1930

The RUMELY OILPULL TRACTOR and the RUMELY DOALL Industrial Winch TRACTOR



TOUGH as anything under a hide, the big work mule gets all the H-E double L that was ever made for an animal—and keeps right on going. That's the Rumely OilPull Winch Tractor, for use on the biggest jobs . . . the pulling equipment that never gives in.

On the other hand, consider the wiry little "all-purpose" horse, the kind that can do everything from buggy pulling to a light job of plowing—where the big work mule would be a waste of power. That's the Rumely DoAll Industrial Winch Tractor, for use at the well or around the refinery—a rugged, compact, four-cylinder machine that will handle any job where you don't feel the absolute need for the big, heavy-duty OilPull. With these two, you've gone from A to Z in pulling equipment.

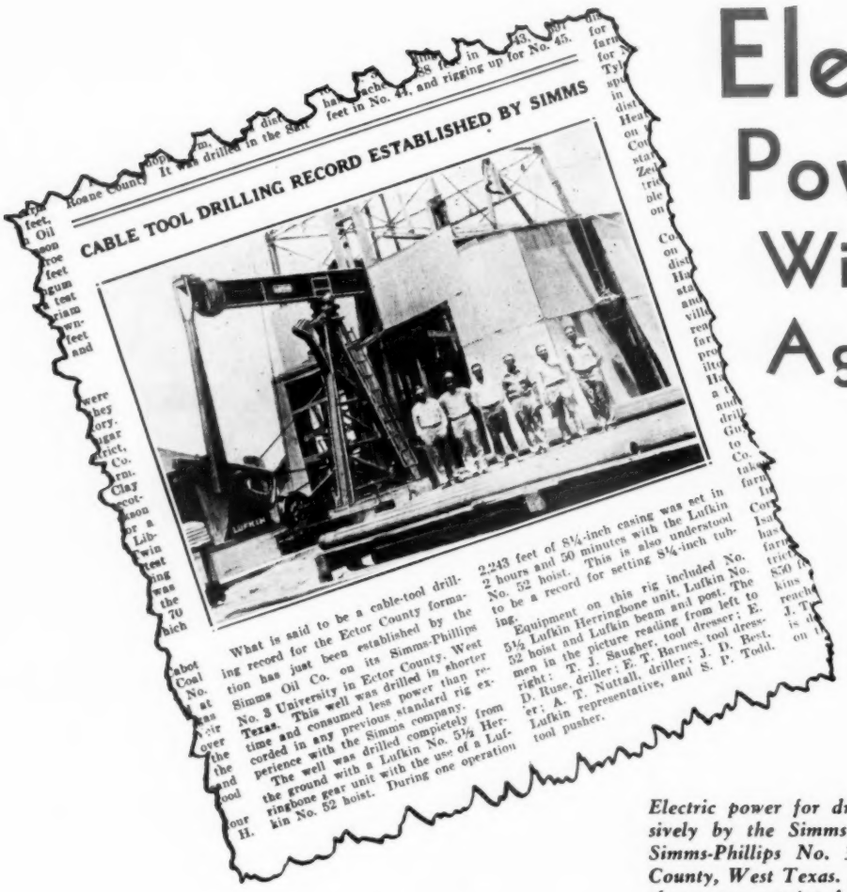
—Send all inquiries and orders to - - -

FRED E. COOPER

Special Rumely Representative and Developer of Oil Field Machinery

18 S. MADISON TULSA, OKLA.

Electric Power Wins Again



CABLE TOOL DRILLING RECORD ESTABLISHED BY SIMMS

What is said to be a cable-tool drilling record for the Ector County formation has just been established by the Simms Oil Co. on its Simms-Phillips No. 3 University in Ector County, West Texas. This well was drilled in shorter time and consumed less power than recorded in any previous standard rig experience with the Simms company. The well was drilled completely from the ground with a Lufkin No. 5½ Herringbone gear unit with the use of a Lufkin No. 52 hoist. During one operation 2,243 feet of 8¼-inch casing was set in 2 hours and 50 minutes with the Lufkin No. 52 hoist. This is also understood to be a record for setting 8¼-inch tubing.

Equipment on this rig included No. 5½ Lufkin Herringbone unit, Lufkin No. 52 hoist and Lufkin beam and post. The men in the picture reading from left to right: T. J. Saugher, tool dresser; E. D. Ruse, driller; E. T. Barnes, tool dresser; A. T. Nuttall, driller; J. D. Best, Lufkin representative, and S. P. Todd, tool pusher.

Electric power for drilling was used exclusively by the Simms Oil Company on its Simms-Phillips No. 3 University in Ector County, West Texas. The picture and story shown are reprinted by special permission of the Simms Oil Company from the October 23 issue of Oil and Gas Journal.

Shorter time and less power consumption are two outstanding features of the Simms accomplishment. Commercial equipment, powered with a 25/55 HP 440 Volt 1200 RPM Electric Motor connected to the unit by means of 11 "V" type rubber belts on a 46" center, was used for the entire drilling process.

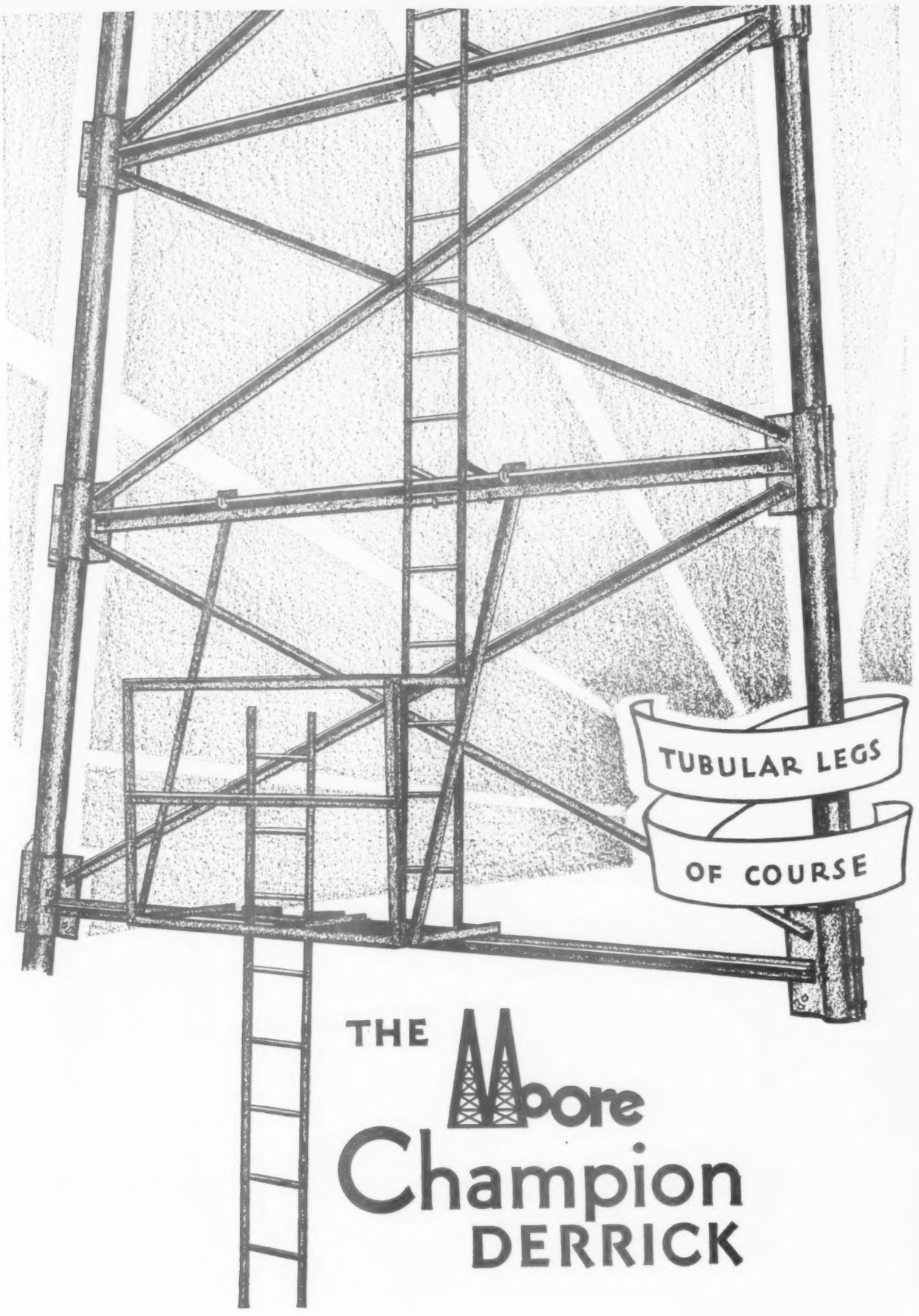
The well was spudded in at 2 a. m. June 24 and completed to a depth of 3650 feet August 3, a real tribute to the speed and efficiency of electric power for drilling.

Further information about electric power for drilling may be obtained from the Commercial Dept., Fort Worth, or any district office of Texas Electric Service Company.

TEXAS ELECTRIC SERVICE COMPANY

General Offices

FORT WORTH



THE Moore Champion DERRICK

SAFETY REQUIRES UTMOST LEG STRENGTH

The foundation on which Moore has built a dependably safe derrick is tubular steel leg strength.

SAFETY PLATFORMS AND LADDERS

In addition to derrick strength, the design of attaching structures, such as platforms and ladders, is important for the safety of the operating crew. Champion Derrick platforms are standardized, for use on any of the various sized derricks. They may be adjusted to any one of several girt heights. Ladder sections are interchangeable and rigidly attached. Ample room between the ladder and the girt prevents the catching of a man's toes.

THE Moore Champion DERRICK

Moore ALL STEEL RIG EQUIPMENT

LEE C. MOORE AND COMPANY, INC.
PITTSBURGH Established 1907 TULSA

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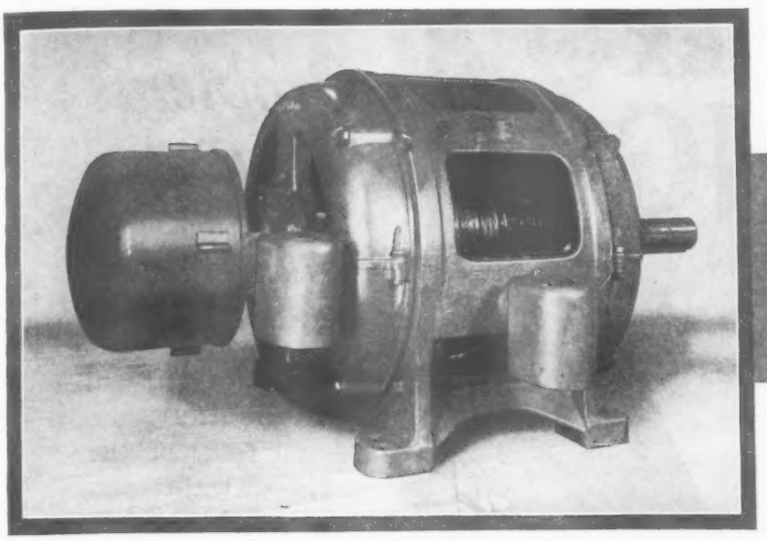

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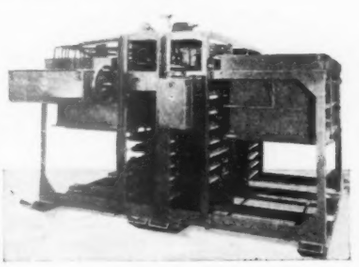

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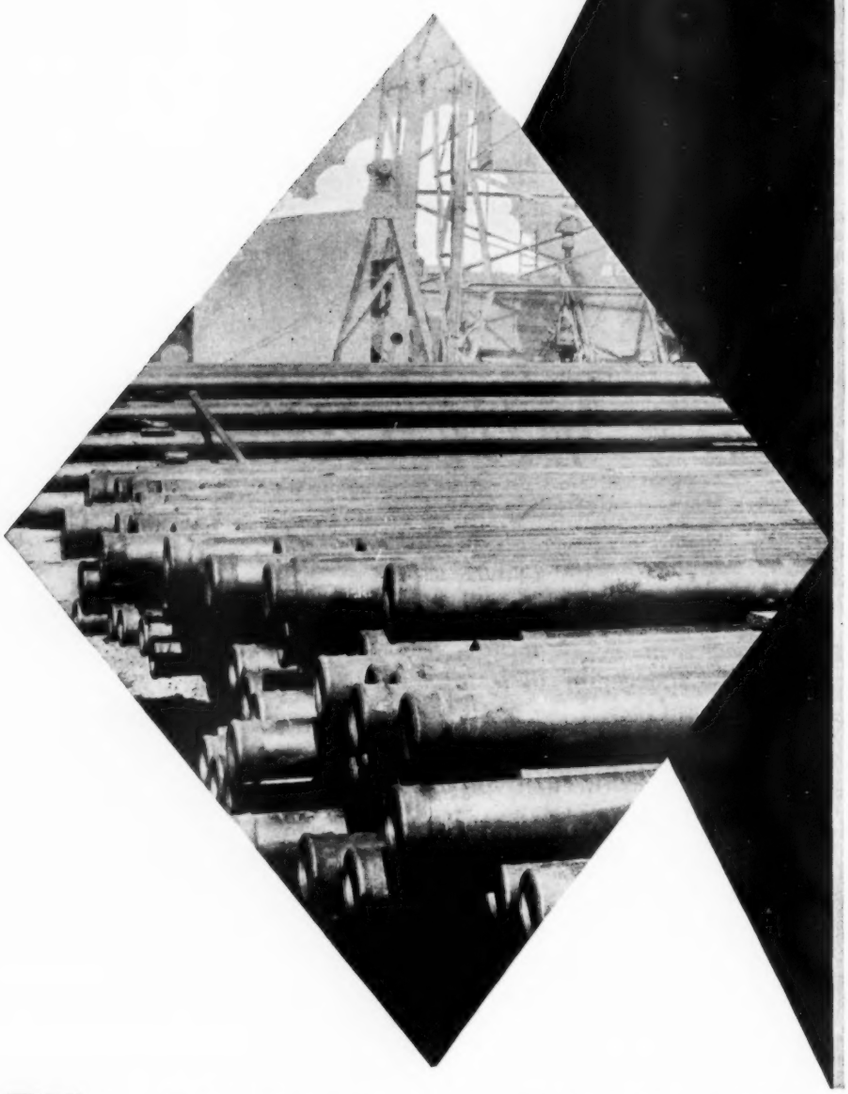

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NOVEMBER 7, 1930

Edited Weekly at Houston, Texas

SPENCER W. ROBINSON, EDITOR

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R. L. DUDLEY, *President*

A. L. BURNS, *Gen'l Manager*

SPENCER W. ROBINSON, *Editorial Director*

J. KENT RIDLEY, *Managing Editor*

NEW YORK: Room 613, 250 Park Avenue, Dick Swinsky, Manager.

PITTSBURGH: 703 Park Bldg., W. W. Pigue, Manager.

CHICAGO: 624 So. Michigan Ave., O. R. Waller, Manager.

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THE OIL WEEKLY

VOLUME 59, NO. 8 NOVEMBER 7, 1930

MARKET-WISE

Additional Market Data on Pages 91 to 98

ELIMINATION of price postings above 40 gravity by the majority of purchasers in the Mid-Continent and the posting of an irregular price schedule for Gulf Coast crudes have been widely discussed among oil operators since the wave of price readjustments has subsided. Producers of exceptional quality oil from a gravity standpoint have been subjected to a much greater price cut than owners of ordinary crudes under the new schedules.

Failure of major companies to get together on price values of Gulf Coast oils has brought confusion into the market situation, and may lead to more adjustments being made.

Humble Oil & Refining Company took the lead in discarding price postings above 40 gravity in all fields, and considerable speculation has been going the rounds among oil men as to whether or not this move was largely directed at the above company's Big Lake field crude contract. Mixing of 58 gravity oil produced from the 8500-foot wells with production from shallower wells, the Big Lake field is producing above 44 gravity oil. This oil carries a high sulphur content, and rightfully belongs in a classification with other West Texas crudes. Humble Oil & Refining Company contraced on December 15, 1924, to take a maximum of 20,000 barrels of crude daily from Big Lake field until April 1, 1940, paying average Mid-Continent prices of five major companies, plus 20 cents per barrel gathering charge.

THE Big Lake field crude contract obviously was made by Humble Oil & Refining Company to protect its pipe line investment in West Texas; in 1924 there were no other important fields in the district. The contract has netted the two concerns in possession of the field, and the University of Texas, which is the royalty owner, a premium for all oil sold. The development of the deeper horizon during the past two years has resulted in the field later enjoying the distinction of being the only important oil area in the Southwest that is marketing top priced crude. Under the new price arrangement Humble Oil & Refining Company is paying slightly more than $1.00 per barrel, plus 20 cents gathering charge, on its Big Lake crude takings, while the highest price paid by any buyer in other West Texas fields is 79 cents per barrel for 36 gravity and above.

Some relief from this crude contract has been in prospect for Humble Oil & Refining Company through the Texas Railroad Commission's orders for a substantial production restriction in the Big Lake field. Several hearings on the subject have been held by the commission, and the producers are now tubing most of the record depth wells in order to conserve gas and increase the volume of back pressure now applied to all deep wells. However, it is doubtful if the commission's oil curbing order can be met entirely, as some of the wells increase in oil and gas yield despite back pressure, while open hole in some of the big wells is a big hazard to deal with.

The Big Lake field crude contract surpasses the famous 33,333,333 barrel oil sale made by the late Col. A. E. Humphreys and associates to deliver crude produced in the Mexia-Corsicana district at a flat price of $1.50 per barrel to the Continental Trading Company. Through acquisition of properties covered by this contract, Pure Oil Company is enjoying a price of $1.50 per barrel for a portion of its production in the Mexia-Corsicana district, while the general price is only about 95 cents per barrel. Pure Oil Company will barely complete this contract before depletion of its properties.

FAILURE of crude purchasers to gain full benefits of oil classified in price up to 44 gravity and above is another factor taken into consideration by Humble Oil & Refining Company in eliminating the top grades. In most fields that yield above 40 gravity oil, there is a greater volume that does not exceed the latter figure in gravity. The better grade of crude is usually mixed with common stocks, thereby losing its identity. Such views were apparently taken by Gulf Production Company, Carter Oil Company and Magnolia Petroleum Company in promptly following the lead taken by Humble Oil & Refining Company, while Stanolind Crude Oil Purchasing Company delayed falling in line until November 1. The Texas Company eliminated the top postirgs in the Panhandle, but retained the 44 gravity and above schedule in other areas.

(*Continued on page 136*)

Tariff Commission Seeking Data on Crude Costs

By CLARENCE L. LINZ
Washington Representative

WASHINGTON, D. C.—Information regarding the cost of delivering crude oil to the Atlantic seaboard refineries from southwestern points as compared with the cost from Lake Maracaibo, Venezuela, required under a provision of the tariff act of 1930, was submitted to the United States Tariff Commission October 31 at a public hearing held in connection with the commission's investigation. The study is to cover the three years immediately prior to 1930, and the report must be made next February.

The entire crude oil production of the United States should be taken into consideration in arriving at cost figures, the commission was told by Russell B. Brown of Tulsa, Oklahoma, counsel and executive manager of the Independent Petroleum Association, who was assisted at the hearing by Louis Titus, Washington attorney.

MR. TITUS declared that the only purpose of congress in calling for the figures is to determine whether there should be a tariff on oil and if so, how much. It is recalled that throughout the tariff contest last winter a large delegation of independent producers came to Washington for a tariff of $1.00 a barrel on crude and 50 per cent on the value of refined products. The proposal in one form or another was defeated six times and adoption of the Thomas amendment was the only victory won by the independents.

With another cut in the price of crude in the Southwest the independents have given every indication of again asking congress to give a tariff on oil and in the program large production from Lake Maracaibo and its environs, the cost of which is being studied by the commissions, is expected to play a leading part. The commission has sent inquiries to the industry, and has a large force of investigators working in various United States fields and the Venezuelan district.

Cost at Refinery

The form of the inquiries, Mr. Brown told the commission, created a doubt as to the commission's procedure. He said the industry wanted to know whether the figures asked were to include the cost of bringing the oil to the top of the well and transportation to the refinery, and not the sale price. He said that the price of crude had been forced down below cost of production.

It is understood that the commission's questionnaire contemplated the cost of the oil to the refinery, which might be arrived at after refining, and sale of the products.

Mr. Brown said that the cost of Venezuelan production should include the entire area and not Lake Maracaibo alone. The provision names the lake, all of the bed of which is susceptible of being produced, and is owned by one company, he said, whereas the entire shore line is being produced.

The independents do not want the inquiry confined to the large companies, but believe it should include smaller companies and the smaller fields. About 75 per cent of the production here is by about 100 companies producing 1,000,000 barrels a day or more, the small companies producing the remainder. It would be impossible to include every producer in the United States, Mr. Brown said, many of them keeping no books, yet others are complete in that respect. He doubted, however, that data from the 75 per cent is representative of the industry, and upon that based his suggestion that general cost of all oil produced in the United States be included.

There is no relation between gravity of the oil and cost of production, Mr. Brown said. The domestic production is in varying grades and gravities, which is not the case in Venezuela, he explained, and the independents believe there should be found a comparative instance between domestic and foreign oil in arriving at costs contemplated by the law. In the same manner, he added there were varying costs of production between domestic fields and even between properties in the the same field which makes it necessary, he thought, to embrace all United States production, finding an average and comparing that with the Venezuelan average.

"The cost of production at the well and transportation to the refinery is what we are after," said Mr. Brown. "The price we get for the oil is below the cost of production. Practically all of the oil under inquiry comes from the Maracaibo basin, therefore, costs there would be representative."

Under cross-examination by the commission, Mr. Brown said he did not have in mind importations on the Gulf of Mexico, but the Atlantic seaboard. The former is a district of large exports rather than imports, he explained.

Mr. Titus told the commission that the cost of delivery of the oil to the seaboard meant nothing, since the price at the well might be forced below the actual cost of production. He explained that before the flood of Venezuelan oil, production from the Smackover field in Arkansas went to the Atlantic seaboard. It is a heavy oil. Likewise Venezuelan oil is heavy, makes little gasoline, but with large fuel oil base, and, therefore, crowds out the heavy oils of this country.

Heavy oil production of Texas, Oklahoma and California, Mr. Titus said, all went to the Atlantic seaboard, but since it is being crowded out by the Maracaibo production, it filters into nearby states, and throughout the West, together with production from Montana, and in that way makes sharp competition between domestic productions. No other oil interests were heard by the commission.

Importations of crude and refined products during 1929 amounted to about 108,000,000 barrels, with about 92,000,000 barrels for the previous year. Importations for the first nine months of 1930 were 81,500,000 barrels, or nearly 2,000,000 barrels less than for the same period in 1929.

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

E. B. REESER
President American Petroleum Institute

Presides at General Session
UNIT OPERATION
WEDNESDAY, 8 *P.M.*, GRAND BALL ROOM

DIVISION OF PRODUCTION

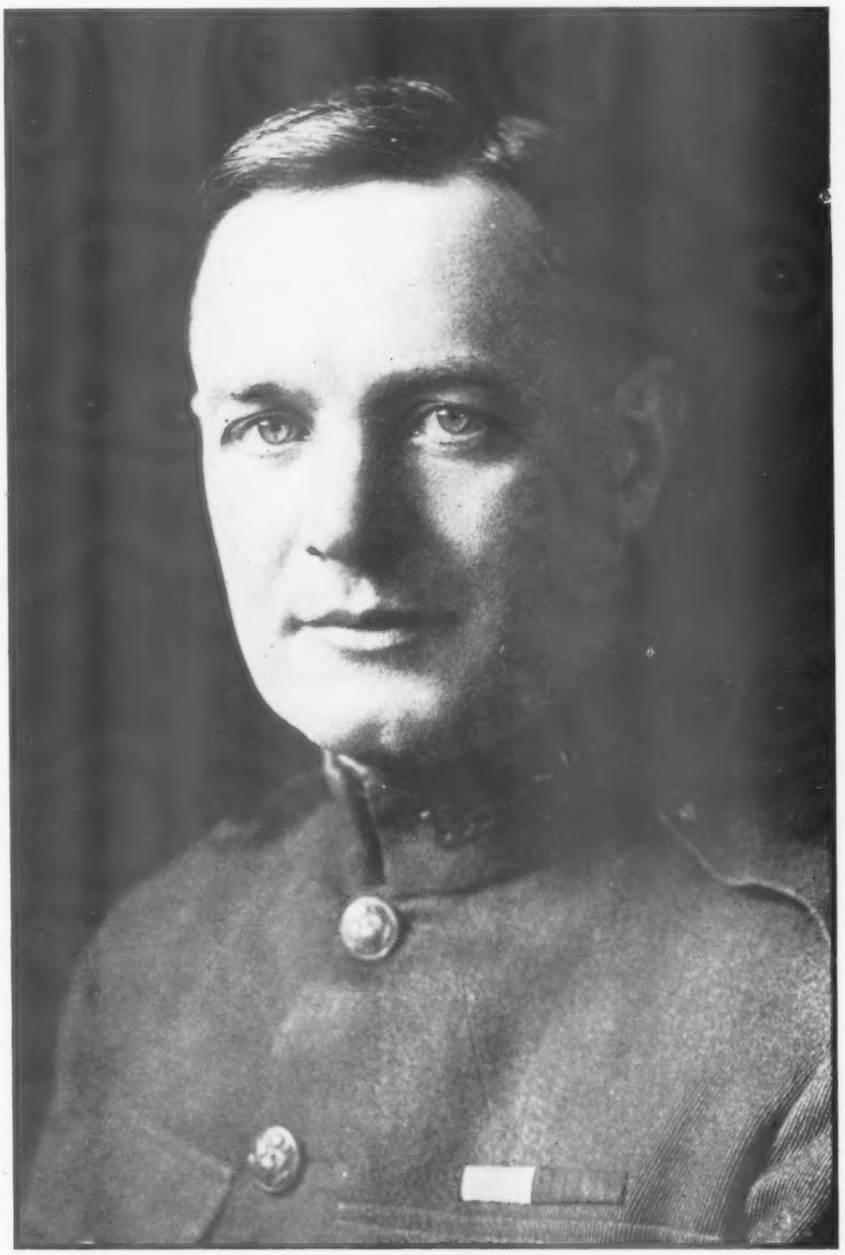
ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

WILLIAM N. DAVIS
Vice President of American Petroleum Institute for Production

Presides at Business Session
DIVISION OF PRODUCTION
THURSDAY, 2:00 P. M., SOUTH BALL ROOM

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE



COL. WILLIAM J. DONOVAN
Former Assistant Attorney General of the United States

Guest Speaker

THE ANTI-TRUST LAWS

GENERAL SESSION, TUESDAY, 2:30 *P. M.*,
GRAND BALL ROOM

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

T. E. SWIGART
General Chairman, Division of Production. Address: Engineering and Economic Phases of Unit Operation, Wednesday, 8:00 P.M. Grand Ball Room.

J. R. McWILLIAMS
General Vice Chairman, Division of Production, Presiding at Session of Drilling, Production and Pipe Line Transportation, Wednesday 9:30 A.M.

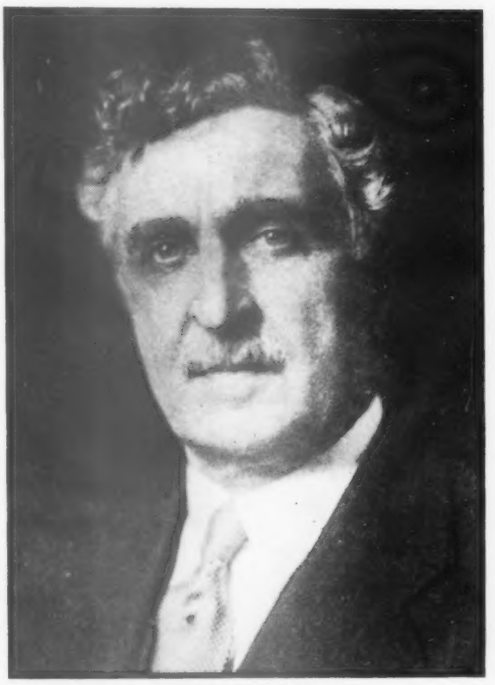
C. A. YOUNG
General Secretary, Division of Production and Director of Standardization

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

JOHN FRANKLIN DODGE

Address: Santa Fe Springs—A Comparison Between Competitive and Unit Operation, Wednesday, 2:00 P.M., South Ball Room.



GEORGE OTIS SMITH

Address: (Subject not announced) at Unit Operation Session, Wednesday, 8:00 P.M., Grand Ball Room.

JOHN R. GIGNOUX

Address: Selection of Oil Well Casing Based on California Practice, Wednesday, 9:30 A.M., South Ball Room.

R. B. KELLY

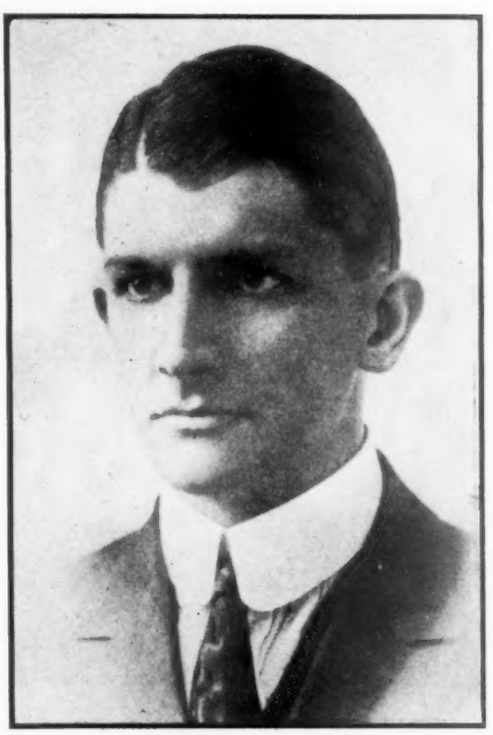
Address: Unit Operation in the Van (Texas) Pool, Wednesday, 2:00 P.M., South Ball Room.

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

E. G. GAYLORD
National Chairman of Production Practice Committee

E. P. BLY
Chairman of the Committee on Corrosion of Oil Field Equipment.



J. F. PUTMAN
Address: Soil Corrosion—Causes and Pre-determination, Thursday, 9:00 A.M., South Ball Room.

DIVISION OF PRODUCTION

ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

STANLEY GILL
Report: Corrosion of Production Equipment, Thursday, 9:00 A.M., South Ball Room.

W. W. SCOTT
Address: Improvements in Production Practice, Wednesday, 9:30 A.M., South Ball Room.

JOHN P. WEST
Address: Land and Lease Aspects of Unit Operation, Wednesday, 2:00 P.M., South Ball Room.

GEORGE F. PRUSSING
Report: Committee on Safety, Thursday, 2:00 P.M., South Ball Room.

DIVISION OF PRODUCTION

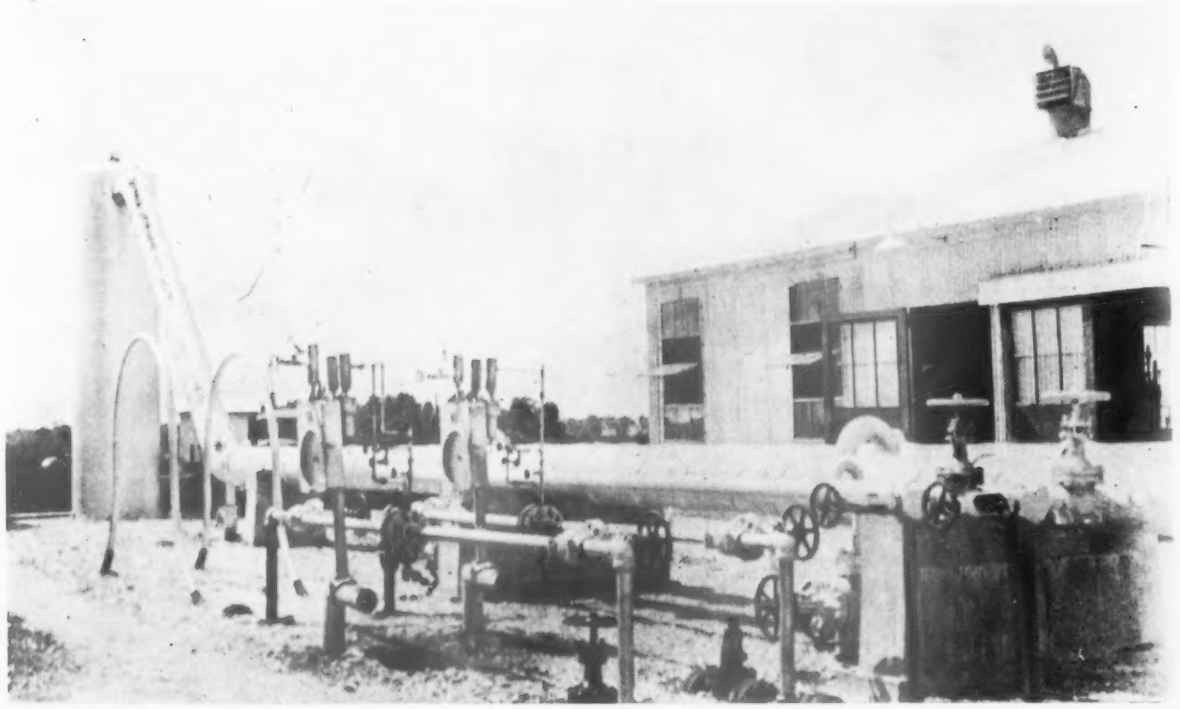
ANNUAL MEETING, CHICAGO, NOVEMBER 10-13, 1930
AMERICAN PETROLEUM INSTITUTE

W. S. FARISH
Report: Committee on Measuring, Sampling and Testing Crude Oil, Thursday, 2:00 P.M., South Ball Room.

V. L. MARTIN
Report: Committee on Disposal of Production Wastes, Thursday, 2:00 P.M., South Ball Room.

JOHN R. SUMAN
Report: Central Committee on Standardization, Thursday, 2:00 P.M., South Ball Room.

ROY F. FIKE
Report: Committee on Automotive Transportation, Thursday, 2:00 P.M., South Ball Room.



Details of the three gas headers, orifice meters and Shaffer chokes for control of gas volumes are shown. Arc type of expansion joints are used at this point and at each of the key wells

Maintenance Of Pressure At Sugarland

By GEORGE REID
Staff Representative

PRESSURE maintenance through the induction of gas into the producing sand body in the early or flush stages of field development is not yet a general practice. However, it is a practice that seems likely to grow in importance, and which will in all probability be employed where conditions of field ownership or unitized development of oil pools will permit concentrated control or exploitation.

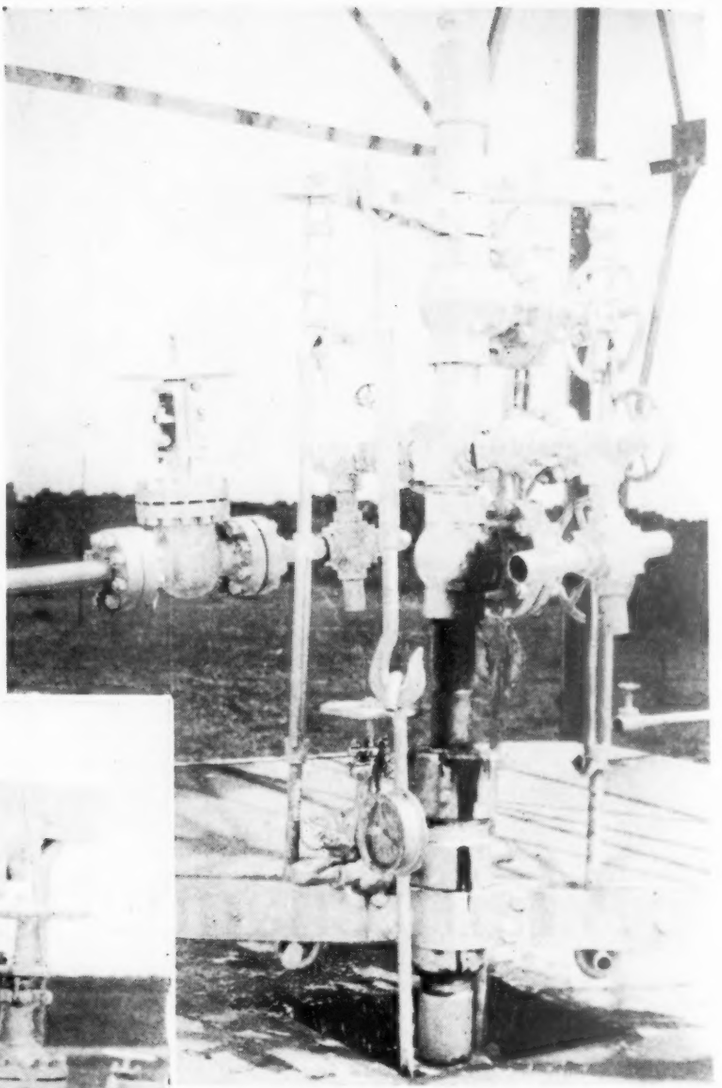
With success attending the ventures of those few companies working on pressure maintenance through the use of the gas drive system the engineering fraternity is giving more study to the possibilities of this scientific producing method.

One of the outstanding programs of pressure maintenance in operation at this time is the work of Humble Oil & Refining Company at its Sugarland (Dewalt), Texas, salt dome field. This field is one of the few salt dome fields where repressuring has been attempted, but it is particularly of interest because it is one of the small number of fields where efforts are made to maintain field pressures.

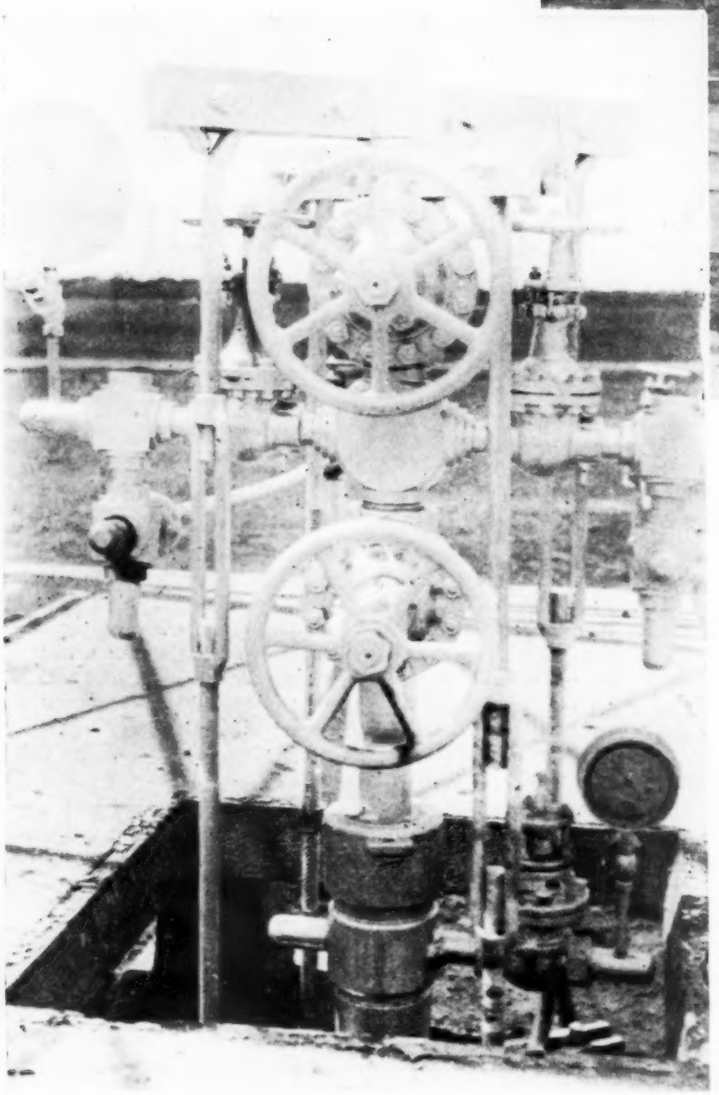
Salt domes in the past have either lacked natural gas production or have been considered too irregular and broken in structure to warrant experiments in pressure restoration or maintenance. Sugarland, which is considered an ideal dome, provides a practically uniform producing sand horizon which overlies the salt at depths from 3400 to 3700 feet, with a formation pressure of around 1400 pounds and sufficient gas production, thus being well adapted for pressure maintenance. In the top of the producing sand or the apex of the dome and within a radius of about 300 feet there is practically no oil production and wells drilled in this area are employed as key or gas-injection wells. The producing sand dips outwardly from this "dry" area, gradually sloping on all sides to the edges.

Sugarland, being controlled by one company, has been developed conservatively and systematically with drilling activities regulated to effect the proving of the producing zone with as few tests as necessary. Production has been limited to 12,000 barrels daily although the estimated potential open flow capacity is much larger than that figure. The producing area overlying the salt plug has been well defined by the 67 tests drilled.

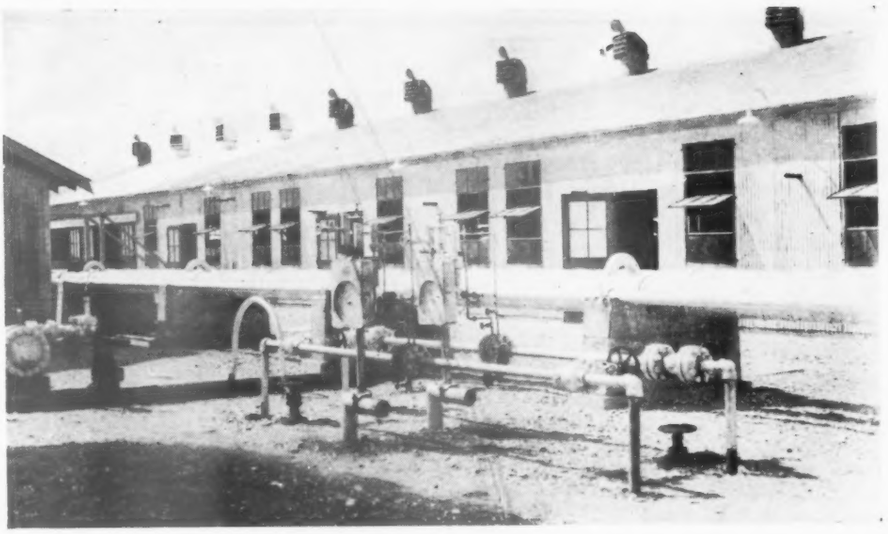
Several methods have been employed to lower the gas-oil ratio at Sugarland, including choking of the producing wells, closing in the wells with high gas-oil ratios, and otherwise



Key or injection wells are equipped with high pressure fittings and double anchored Christmas trees for handling induction gas at 1350 pounds pressure.



Close-up of the Christmas tree valves and fittings on a flowing well. Casing and tubing pressures are indicated and recorded for each well. Two two-inch flow lines conduct the oil from the well head.



The second metering system through which high pressure gas at 1350 pounds is passed en-route to the key wells. Arrangements are made for using four injection points but only three wells are used for this purpose. High pressure valves and fittings are required.

controlling production of the field to secure flowing wells with the least possible production of gas per barrel of oil. By closing in all of the wells of comparatively high gas-oil ratio it has been possible to retain an estimated two billion cubic feet of gas which would have been produced and possibly wasted, since the gas is sour with hydrogen sulphide.

May Recover 2,000,000 Barrels

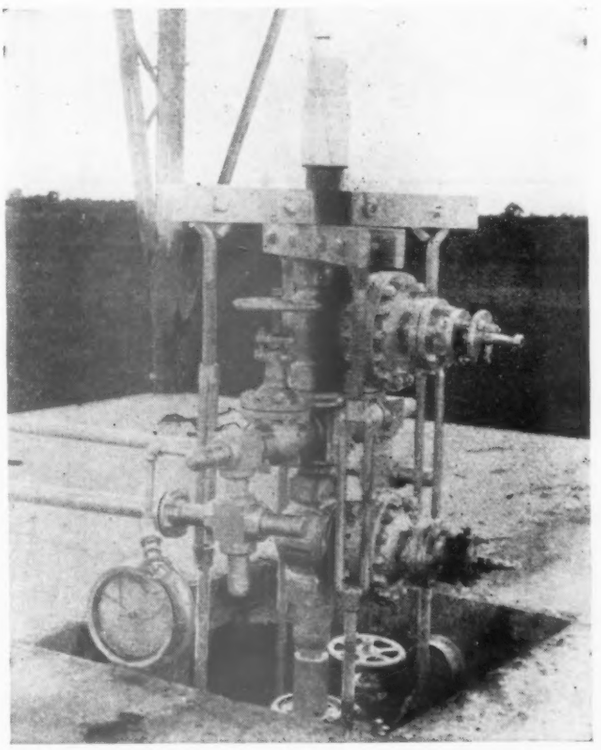
It is estimated that the conserved gas is sufficient at existing pressures to recover 2,000,000 barrels of oil by flowing if properly regulated. The future of the field is contingent upon the utilization of this resource and its energy available both as a lifting medium and as a means of checking water encroachment.

In addition to this retention of gas, which under other conditions would have been lost and unavailable as a lifting agent, the operators of the field have made a progressive and important step in the installation of its plants and distributing system for returning to the reservoir all available gas produced with the oil.

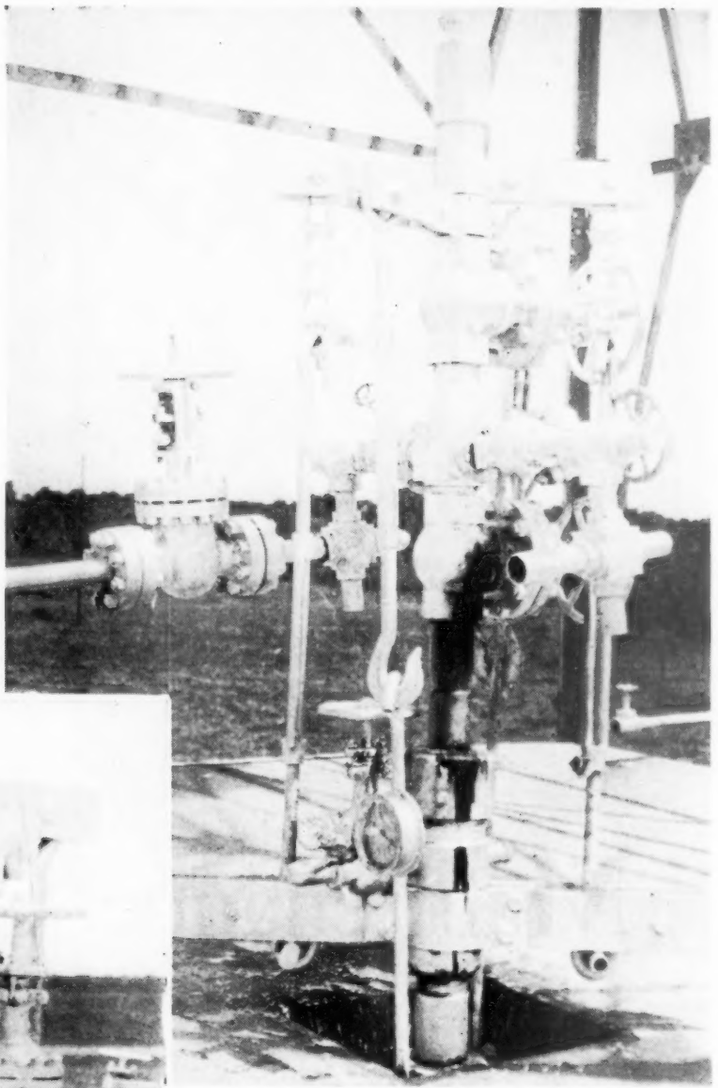
Through the practices of regulation of flowing conditions in the field it was possible to lower the gas oil ratio of wells permitted to produce to less than 300 cubic feet of gas per barrel of oil. As a consequence of the pressure maintenance program involving induction of gas into the oil zone at nearly the rate of gas production, there has been a reduction of gas-oil ratio equivalent to the difference between total gas produced and total gas induced into the sand body. During the month of August this difference, or net gas-oil ratio, at Sugarland was 24 cubic feet per barrel of oil. This net gas-oil ratio has been gradually lowered as field conditions improved and as the use of sour field gas for engine fuel was discontinued. Only field operations now consume the field gas production for fuel. In April the net gas-oil ratio or fuel or lost gas-oil ratio, was 59 cubic feet, in May it was 43 cubic feet. In August it was 24 cubic feet, and for the entire time since the start of repressuring the net gas-oil ratio to the end of August was 32 cubic feet. During this same period since the start of pressure maintenance 88.08 per cent of the gas produced in the field has been returned to the sand.

Gas was originally induced into the sand through wells Brazos Farms 6, Camp 3, and Nelson 1. Later Camp 3 was discontinued as an injection well because it was thought that injection at this point was forcing oil up into the dry gas area, and Sugarland Industries 10 was substituted. All of these wells except Sugarland 10 are located directly on top of the structure. This procedure is a direct reversal of usual Gulf Coast field practice where the gas pressure head is usually eliminated in the early stages of development necessitating the production of wells by hydrostatic pressure and pumping with water encroachment lowering oil recovery and making for higher lifting costs.

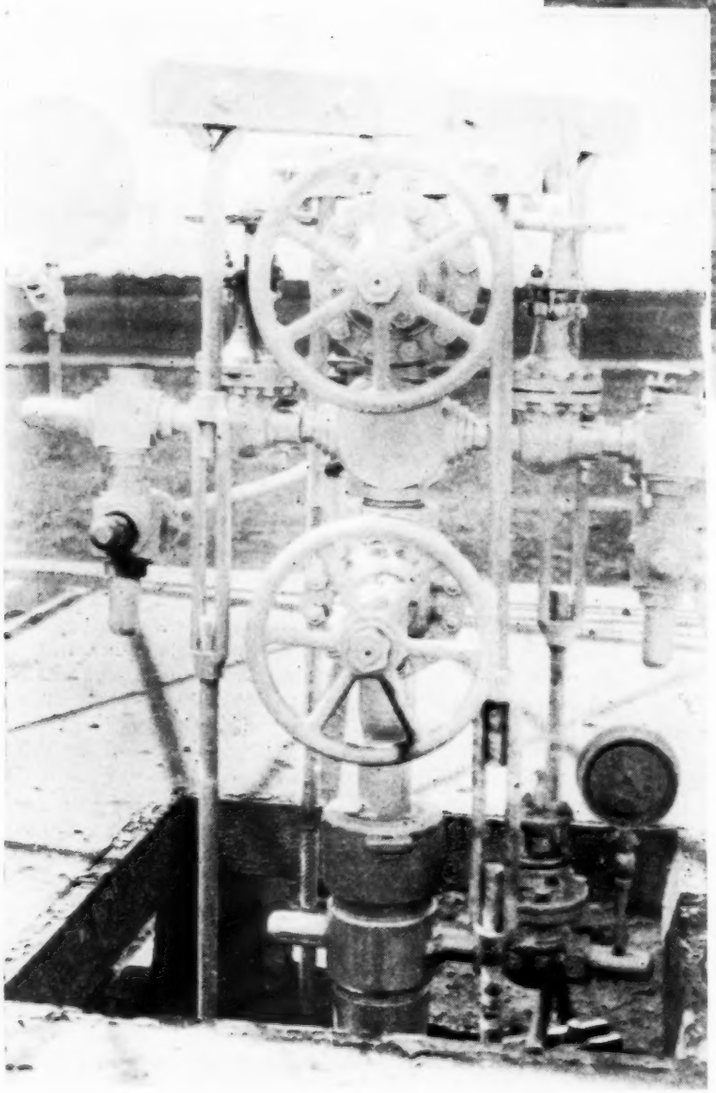
It is not thought that pumping of wells will be necessary in the Sugarland field, and theoretically when all possible oil is produced the structure will remain practically a dry gas reservoir. Also, it is thought that the return of the gas to the sand at practically the original field pressure, will retard or stop the intrusion of water until the oil is recovered and the operators start draining the remaining gas reservoir. Experi-



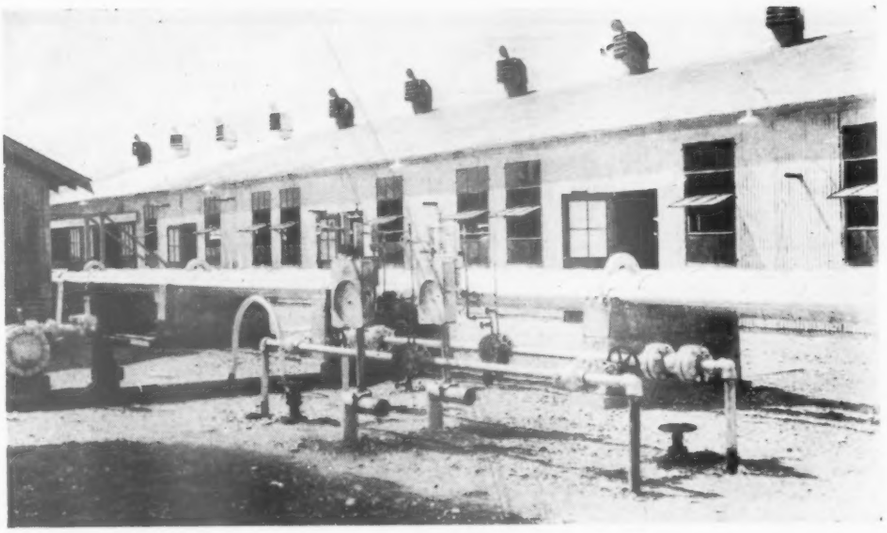
Flowing well in the Sugarland pressure maintenance program showing details of double anchoring method and assembly of valves and fittings.



Key or injection wells are equipped with high pressure fittings and double anchored Christmas trees for handling induction gas at 1350 pounds pressure.



Close-up of the Christmas tree valves and fittings on a flowing well. Casing and tubing pressures are indicated and recorded for each well. Two two-inch flow lines conduct the oil from the well head.



The second metering system through which high pressure gas at 1350 pounds is passed enroute to the key wells. Arrangements are made for using four injection points but only three wells are used for this purpose. High pressure valves and fittings are required.

controlling production of the field to secure flowing wells with the least possible production of gas per barrel of oil. By closing in all of the wells of comparatively high gas-oil ratio it has been possible to retain an estimated two billion cubic feet of gas which would have been produced and possibly wasted, since the gas is sour with hydrogen sulphide.

May Recover 2,000,000 Barrels

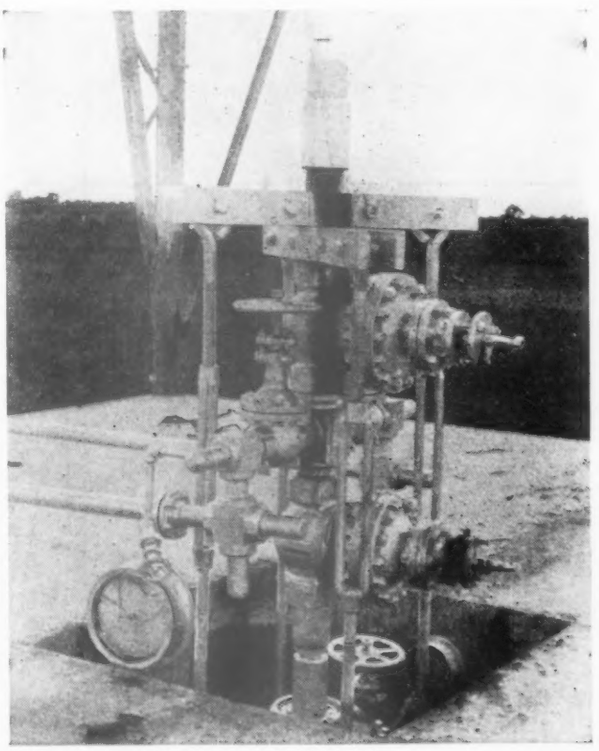
It is estimated that the conserved gas is sufficient at existing pressures to recover 2,000,000 barrels of oil by flowing if properly regulated. The future of the field is contingent upon the utilization of this resource and its energy available both as a lifting medium and as a means of checking water encroachment.

In addition to this retention of gas, which under other conditions would have been lost and unavailable as a lifting agent, the operators of the field have made a progressive and important step in the installation of its plants and distributing system for returning to the reservoir all available gas produced with the oil.

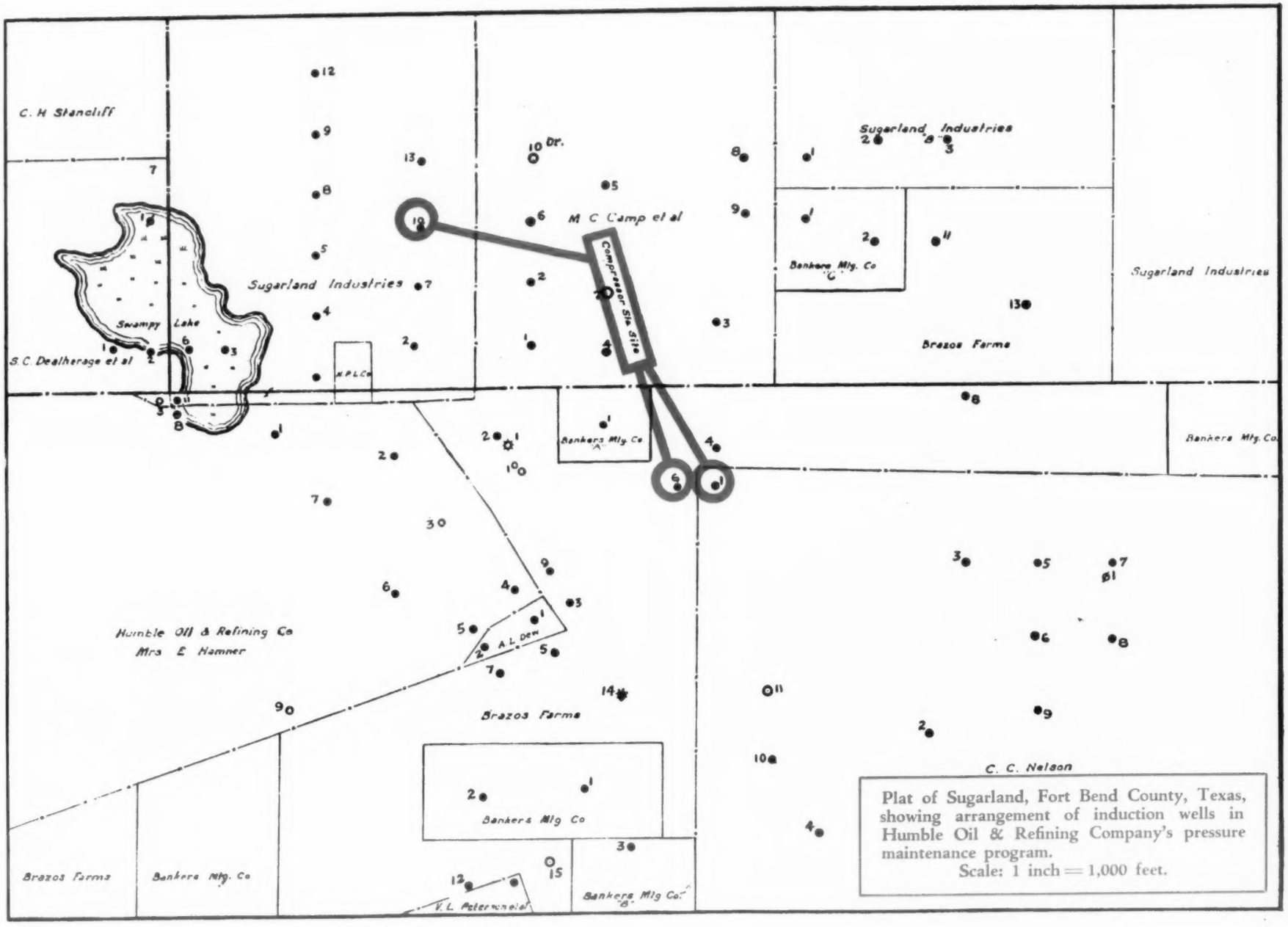
Through the practices of regulation of flowing conditions in the field it was possible to lower the gas oil ratio of wells permitted to produce to less than 300 cubic feet of gas per barrel of oil. As a consequence of the pressure maintenance program involving induction of gas into the oil zone at nearly the rate of gas production, there has been a reduction of gas-oil ratio equivalent to the difference between total gas produced and total gas induced into the sand body. During the month of August this difference, or net gas-oil ratio, at Sugarland was 24 cubic feet per barrel of oil. This net gas-oil ratio has been gradually lowered as field conditions improved and as the use of sour field gas for engine fuel was discontinued. Only field operations now consume the field gas production for fuel. In April the net gas-oil ratio or fuel or lost gas-oil ratio, was 59 cubic feet, in May it was 43 cubic feet. In August it was 24 cubic feet, and for the entire time since the start of repressuring the net gas-oil ratio to the end of August was 32 cubic feet. During this same period since the start of pressure maintenance 88.08 per cent of the gas produced in the field has been returned to the sand.

Gas was originally induced into the sand through wells Brazos Farms 6, Camp 3, and Nelson 1. Later Camp 3 was discontinued as an injection well because it was thought that injection at this point was forcing oil up into the dry gas area, and Sugarland Industries 10 was substituted. All of these wells except Sugarland 10 are located directly on top of the structure. This procedure is a direct reversal of usual Gulf Coast field practice where the gas pressure head is usually eliminated in the early stages of development necessitating the production of wells by hydrostatic pressure and pumping with water encroachment lowering oil recovery and making for higher lifting costs.

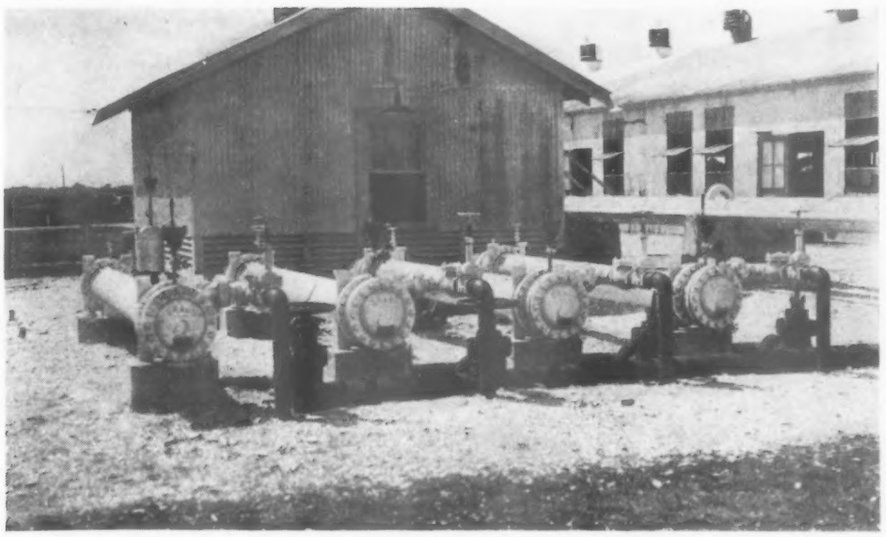
It is not thought that pumping of wells will be necessary in the Sugarland field, and theoretically when all possible oil is produced the structure will remain practically a dry gas reservoir. Also, it is thought that the return of the gas to the sand at practically the original field pressure, will retard or stop the intrusion of water until the oil is recovered and the operators start draining the remaining gas reservoir. Experi-



Flowing well in the Sugarland pressure maintenance program showing details of double anchoring method and assembly of valves and fittings.



Plat of Sugarland, Fort Bend County, Texas, showing arrangement of induction wells in Humble Oil & Refining Company's pressure maintenance program.
Scale: 1 inch = 1,000 feet.



Gas from the low stage compressors at 400 pounds is cooled in four exchanger-type coolers before compression to 1350 pounds.

ments conducted in the field have indicated a fairly even distribution of reservoir pressure and with this condition water encroachment should be held on a level plane, and to continue pressure maintenance in line with the original program of induction of gas into the sands through the three key or injection wells at the top of the structure.

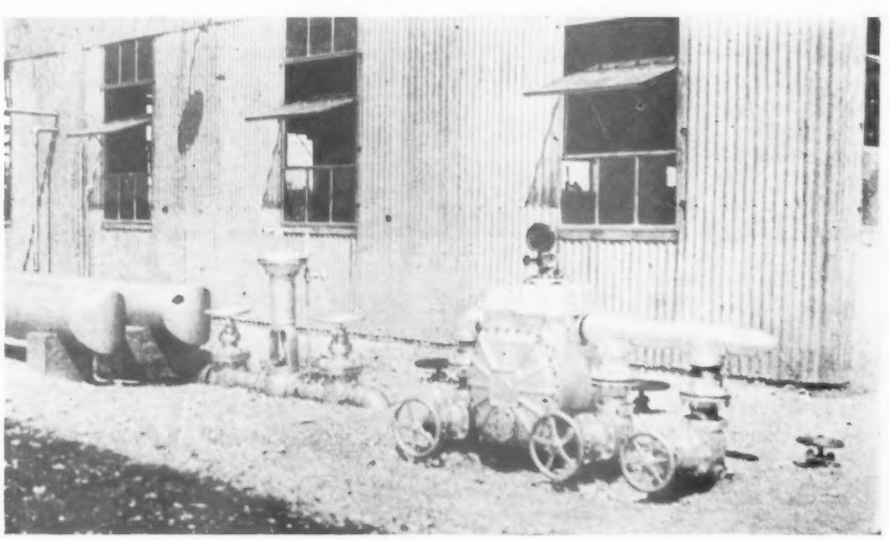
Gas Induction

Hook-up at the three injection wells is designed so that gas may be induced through the casing for the purpose of cleaning the hole. Then the injection is reversed and gas induced through the tubing. Tubing injection is practiced for the reason that gas under high pressure (1350 pounds) if induced through the casing tends to cause leaks because of expansion caused by the heat, as the gas is not after cooled. The details of the injection well hook-up are shown in an accompanying illustration. High pressure fittings and valves of Hughes and Kerotest types are employed throughout, both for injection and flowing wells. Gauges are provided to indicate pressures and on the flowing wells both an indicating and a recording gauge is provided for the reason that company engineers are making a continuous scientific study of the action of all wells in the field and are especially concerned with field pressures. The well head valves and fittings are doubly anchored to the casing string. All of such fittings are well above ground where their condition can be carefully noted. This advantageous condition is attributed to the fact that all concrete derrick floors are mounted on concrete piers from four to six feet above ground. It is nesessary to mount the derricks in this manner because of the fact that the field is subject to occasional flooding as it is located in the Brazos River bottoms.

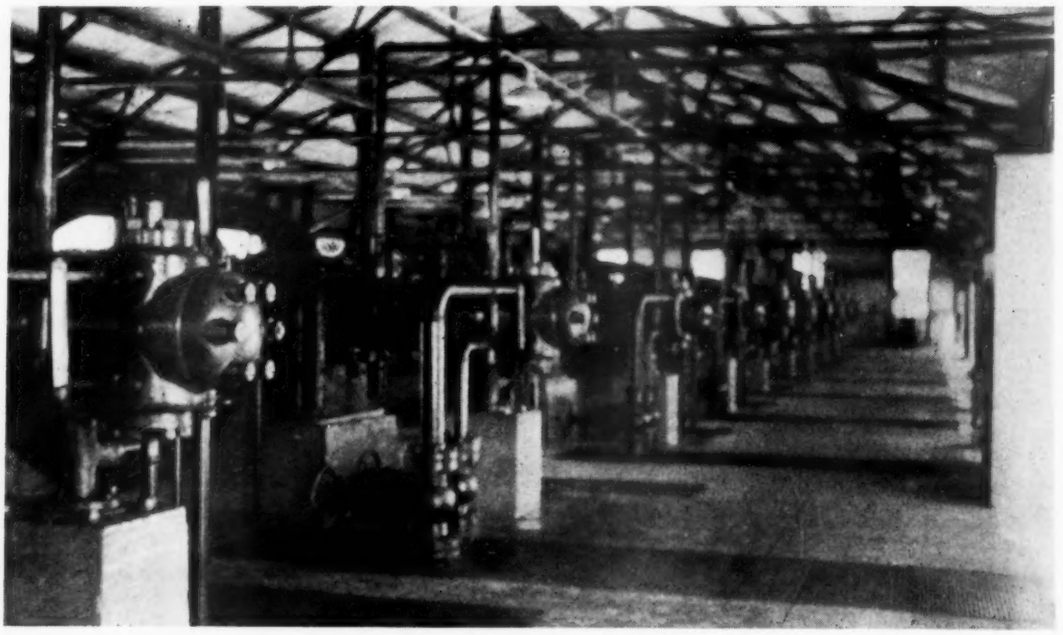
Oil and gas is conducted from the Christmas tree through two two-inch lines and into a four-inch line, flowing directly to the separator, which is mounted on a structural steel platform several feet above ground. Gas is metered from the trap to the compression plant. Oil flows into nearby field storage or flow tanks. All of this equipment is kept brightly painted with aluminum paint, and is easily accessable by reason of a well designed system of graveled roads built by the company. On the entire induction system to the injection wells, welding has been resorted to and the system subjected to a cold water test of 3600 pounds.

Operating Volumes

At the induction pressure required, which usually averages around 1350 pounds each of the key wells is taking more than 1,000,000 cubic feet of gas daily as is indicated by a report,



Automatic control equipment is provided for immediately shutting down the plant by cutting off fuel gas supply in event of trouble with cooling water supply.



Interior of the compression room at Humble Oil & Refining Company's Sugarland, Texas, pressure maintenance plant. Two stage compression is employed, 50 pounds to 400 pounds and 400 to 1350 pounds

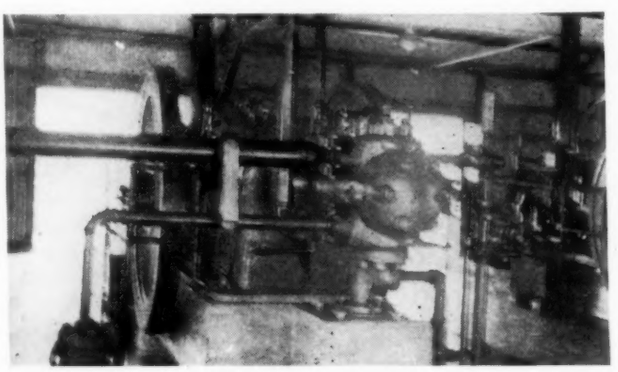
picked at random, of one day's operation—report of September 12.

Well—	Amount of gas injected cubic feet	Induction pressure
Brazos Farms No. 6	1,230,000	1350 pounds
Nelson No. 1	1,177,000	1360 pounds
Sugarland No. 10	1,248,000	1440 pounds
Total gas induced	3,655,000	on Sept. 12.

The report of production and repressuring data for the day, September 9, is strikingly indicative of what is being accomplished at Sugarland.

Oil produced	13,009	barrels
Gas produced	3,641,000	cubic feet
Gas-oil ratio	286	cubic feet
Gas induced	3,439,000	cubic feet
Fuel, or lost gas-oil ratio	15	cubic feet

These figures indicate that on that day but 202,000 cubic feet of gas was taken from the reservoir and not returned, whereas under former methods of operating the entire production of 3,641,000 cubic feet of gas would have been taken from the field and none of it conserved. Note that the gas-oil ratio of 286 cubic feet per barrel of oil is very low, yet the net gas-oil ratio upon consideration of the volume of gas returned to the sand body was but 15 cubic feet per barrel of oil produced. The loss of 3,439,000 cubic feet of gas, which was, however, conserved, would have meant the loss of that pressure to the sand and contributed to the shorter flowing life of the field and lessened ultimate recovery of oil.



Special compression cylinders are employed designed for working pressures up to 2000 pounds per square inch. Engines are 100 brake horsepower.

The record of pressure maintenance work during five months of operation, and including the month of August, also including the reports of the work in its early stages is also of importance as an indication of the results accomplished in this field. The report follows:

	August	Since start of repressuring
Oil produced (barrels)	371,479	1,779,016
Gas produced (cubic feet)	95,856,000	471,426,000
Gas induced (cubic feet)	87,018,000	415,235,000
Fuel gas (cubic feet)	8,838,000	56,191,000
Percentage of gas returned to formation	90.78	88.08
Gas-oil ratio (cubic feet)	258	265
Induced gas-oil ratio (cubic feet)	234	233
Fuel or lost gas-oil ratio (cubic feet)	24	32

Much Gas Waste Eliminated

Due to the fact that production has been choked back since the beginning of the production period there is no basis available for decline curves for individual wells or for the field. It is impossible to estimate benefits due to pressure maintenance in actual barrels of oil production at this time, due to pressure maintenance beginning in the early life of the field. The records do, however, prove rather definitely that the elimination of as much waste of a natural resource, gas, as possible has been achieved, and that utilization of natural energy in securing low lifting costs and economic recovery of the oil has been accomplished. Up to September 1, a total of 474,926,000 cubic feet of gas had been handled by the compressors, 415,235,000 cubic feet being the amount since the

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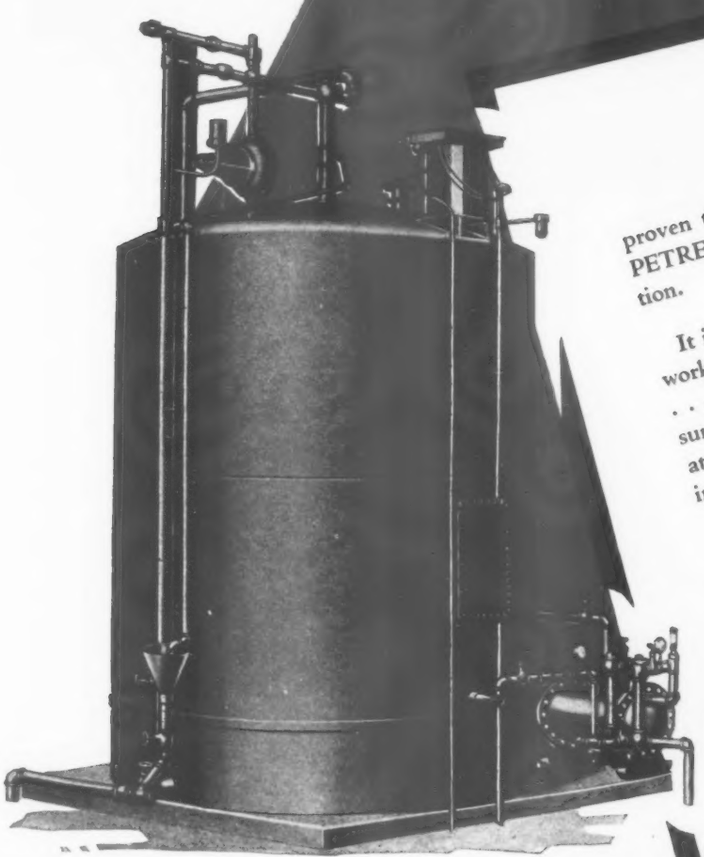

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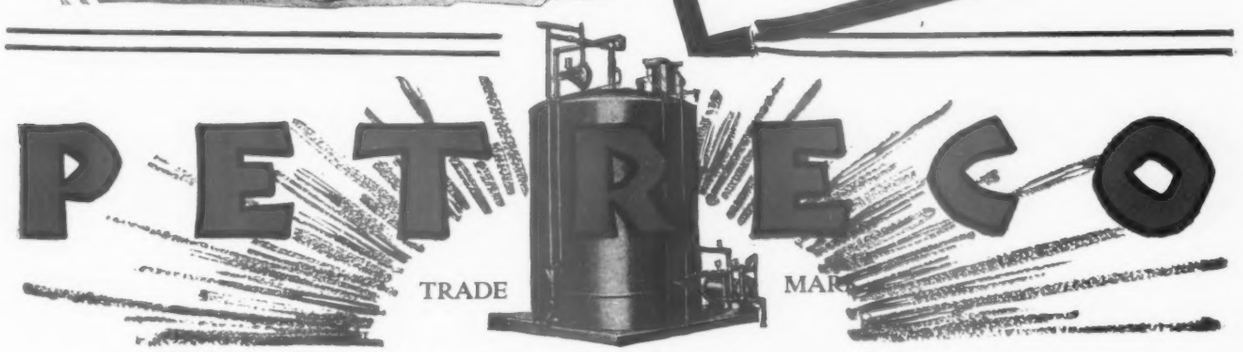

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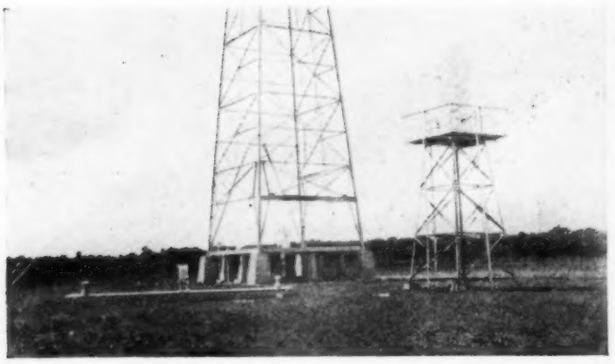
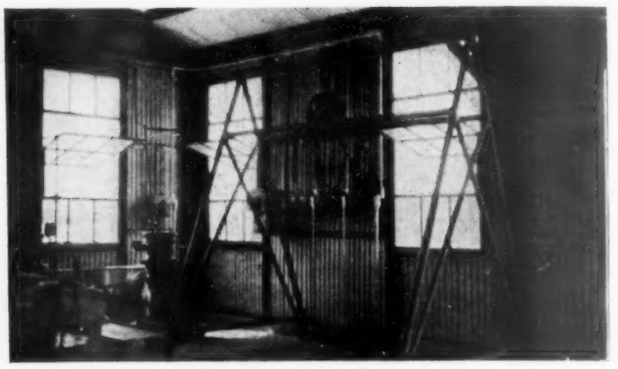


Details of hook-up for flowing wells in the Sugarland field. Note derrick and floor is mounted upon concrete piers because of occasional floods. Steel derricks are standard in this field and steel trap supports are used with safety guard rails provided.



Portable, welded, hay-frame type of repair crane with block and tackle for moving heavy machine parts to the work bench.

present plant was placed in operation on April 2, 1930; 59,691,000 cubic feet were injected in earlier experimental work. During this period the gas-oil ratio has run 265 cubic feet while the net or lost gas-oil ratio has run 32 cubic feet per barrel of oil produced.

The compression plant through which all field gas production save that consumed as fuel in drilling operations is passed and compressed in two stages to about 1350 pounds, is located in the center of the field near the apex of the dome. It has an approximate capacity of 4,440,000 cubic feet of gas daily. There are six Clark low stage compressors of 100 brake horsepower equipped with 8½ by 20-inch cylinders capable of boosting 740,000 cubic feet of gas each to 400 pounds from a gathering pressure of 50 pounds. The four Clark high stage compressors are provided with 4½ by 20-inch cylinders designed to boost 1,200,000 cubic feet each from the low stage discharge pressure of 400 pounds to 2000 pounds if such high pressures are required. The actual work is done from 400 pounds to about 1350 to 1450 pounds.

Gas from the field comes to the plant through a low pressure gathering system of sufficient capacity to allow for future increase in fuel and repressuring requirements. Gas entering the plant first passes through a four by 20-foot scrubber where any oil or moisture is thrown out before the gas enters the 16-inch diameter, low pressure header. All three headers in this system and in the fuel gas and cooling water system back of the main plant building are made up of Naylor pipe. Gas going into the low pressure header enters the intake of the six low-stage compressor machines and is discharged into the second header which is 12 inches in diameter. This header is divided into two sections, the first section handling the hot compressed gas at 400 pounds. These gases are passed through four Braun intercoolers which were designed for 500-pound working pressures. Water is circulated as the cooling medium and is pumped in continuous cycle from the Braun cooling tower. After cooling the 400-pound gas is returned to the second section of the 12-inch header, which serves as the intake header for the four high pressure machines. Any gasoline or condensate from the cooling of the 400-pound gas is accumulated in a 500-pound working pressure accumulator placed on the discharge side of the cooling system. Very little gasoline is produced and the accumulator is dumped by hand.

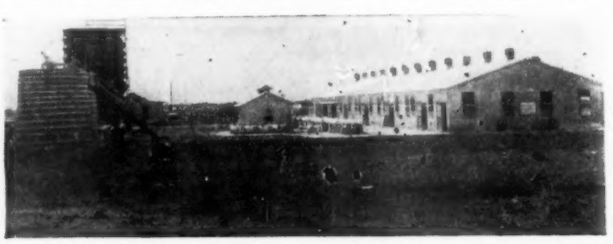
Low stage gas is compressed to 1350 pounds by the high stage machines and returned to the four-inch header. From this point the gas is conducted to the three injection wells, being regulated in volume by the use of Shaffer chokes placed at the point of egress. After this the volume is checked by Westcott orifice meters. The gas flows through an expansion arc which is duplicated at each key well to take care of expansion or contraction of the two-inch lines.

Fuel gas and cooling water are handled through a header system of similar construction. Low pressure fuel gas is supplied the machines through a header 15½ inches in diameter, with smaller headers for the incoming and outgoing cooling water. Sweet gas is supplied for the operation of the machines since the field production is sour with hydrogen sulfide. Cooling water is pumped directly from the accumulating pit at the cooling tower through the water jackets of all the machines and back over the cooling tower in one operation. Three pumps handle the cooling water, two of which are American-Marsh five-inch centrifugals driven by 15 horsepower General Electric motors. The third pump is a Cameron two-inch centrifugal driven by a five horsepower motor of the same type. One of these pumps is used as an auxiliary.

These water pumps are manifolded and installed in such a manner that if failure for any reason should occur a Neilan regulating valve located just outside of the building will immediately shut off the supply of fuel gas to the engines thus shutting down the plant before any damage can be done.

In addition a small sight drip from the water jackets is provided on each machine through which a small stream of water is visible to the operators at all times. This water is drained into the pit of the cooling tower. A ball and seat check valve in the water discharge line from each engine to the cooling tower is provided to prevent back pressure from the cooling tower reversing flow in the event pressure from the water pumps is off for any reason.

For starting the large engines a small two-stage Worthington compressor, size five by 4⅜ by five is provided to maintain 250 pounds of air as reserve pressure in the air accumulators. A welded frame of "hay frame" type is also provided for repair work. This frame is mounted on rollers and equipped with block and tackle suspended in the center of the upper cross member. It is designed to handle the heaviest sections of the compressors with ease and makes it possible to remove cylinders or the like from the machine under repair to the work bench and away from other operating machines.



General view of Humble Oil & Refining Company's pressure maintenance plant at its Sugarland, Texas, field.

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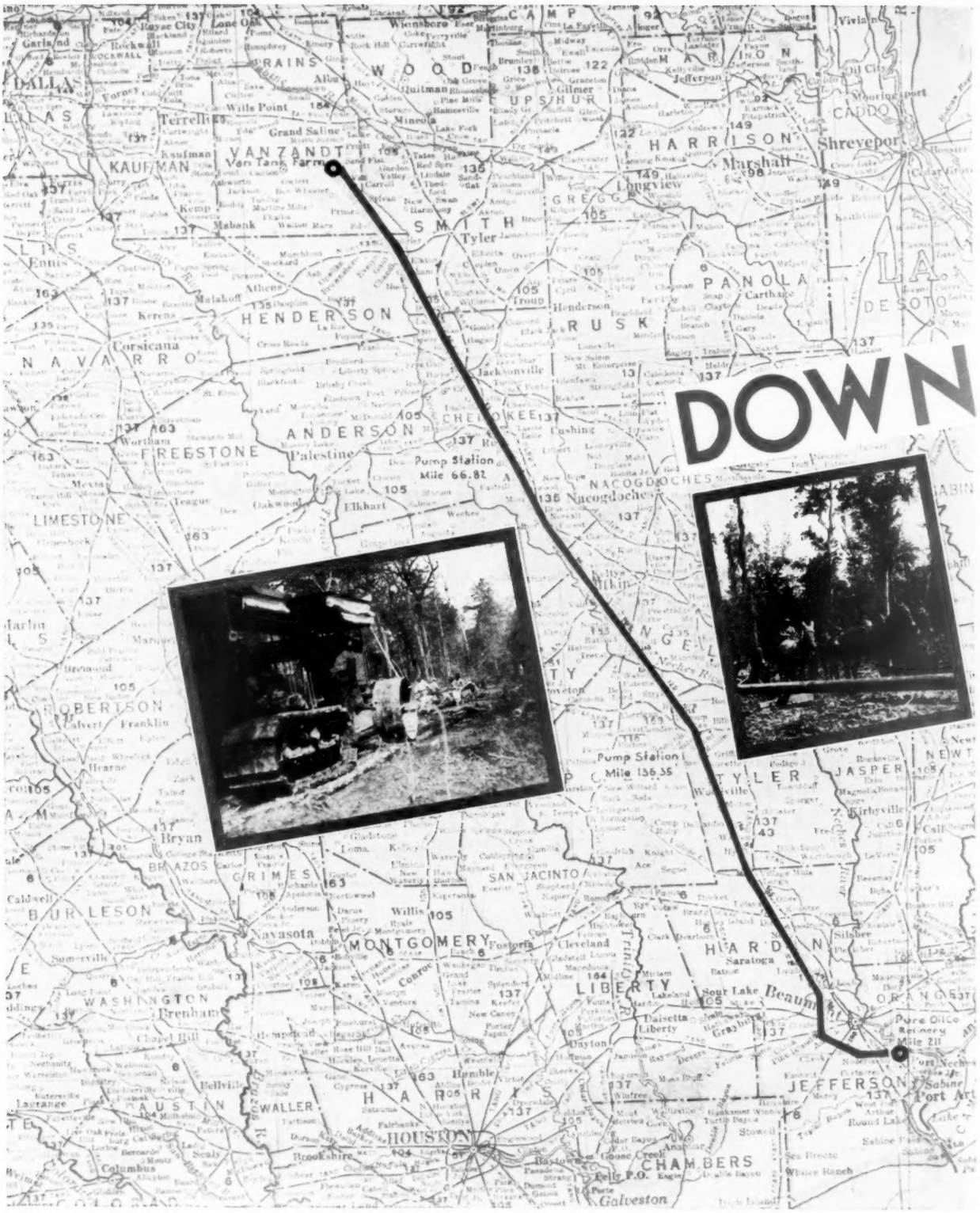

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GAS LINE PIPE

Cable Tools Now Entering Polish Oil Fields

By T. S. SZWABOWICZ

POLISH oil fields geologically are very similar to those encountered in the Rocky Mountain area of the United States. Caving formations interbedded with thin layers of hard rocks are very characteristic. Oil is chiefly found in Eocene, Oligocene, and Cretaceous formations. The overlying formations are either of tertiary or Cretaceous age, very often the latter being on top of the younger rocks, which is due to the tectonic dislocations. Cretaceous, in its upper part, consists of hard quartzite sandstones, and below are encountered green and red shales interbedded with sandstones of either siliceous or calcic cement. Eocene comprises: sandy shales; conglomerates, and quartzites; Oligocene: shales; sandstones; "Menelite" shales, and hornstones*; Miocene: clays with salt and gypsum.

Steep dips of strata, and intermittence of rocks varying largely as to their hardness and consistency offer difficulties for almost any drilling system. Of course, depth plays very important part, and cannot be omitted when choosing kind of tools for drilling. Majority of Polish oil fields is producing from shallow sands, from 150 to 800 meters deep (450 to 2600 feet), but the Boryslaw District which is still yielding the bulk of country's total output, has oil horizons in the depth ranging from 1000 to 1800 meters (3300 to 5900 ft.), with 1500 meters as an average. Bitkow, another large field, also can be classified as one producing from deep sands. Wells in this area are from 800 to 1500 meters deep.

Pole Rig

From the very beginning of Polish petroleum industry until several years ago, Pole tools (also called Canadian or Austro-Galician tools) were exclusively used for drilling. In 1924 some of the major operators tried to use cable tools. Very good results obtained in the first few wells drilled with this tool, caused that the former tools have been gradually replaced by comparatively modern methods imported from the United States.

Advantages of cable tools are pointed out in Table I. Cable tools are giving approximately three times better drilling time than that received with Pole tools. However, the regular standard rig was not adopted. Different reasons were given by operators who did not want to discard entirely the old rig. They decided to use something intermediate between both rigs, and thus a so-called combination rig originated, at present time very popular with almost all companies.

Principal of Pole tool drilling method is exactly the same as that of cable tools, i. e., it is based on percussive action of the drilling bit against the penetrated rock. The only difference between both methods is that instead of the cable, iron rods are used as a connection between the bit and the walking beam. This necessitates a specially designed rig which enables quick running in and pulling out rods. Figure 1 represents general outline of the Pole tool rig. Crank shaft (a) is driven by a 35 to 45 h.p. steam engine. Each of the two other belt pulleys keyed to the crankshaft transmits power on two cable drums (b. c). The drum (b) serves for bailing, and therefore its capacity is larger than that of the drum (c), which pulls drilling rods. The latter drum (c) is also used for running in casing, and this can be done by removing rod line from the drum and putting on casing line. Driving of both drums is done by means of belts (Fig. 2) tightened up when necessary by belt tighteners and levers operated by the driller.

For drilling, the walking beam is to be attached to the crank. Stroke of the crank usually is from 400 to 600 millimeters (16 to 24 inches), and with increasing depth of the well it is diminished in order that undesirable stress on drilling rods can be avoided. On the upper side of the walking beam, just above center irons, there is placed a winch with heavy chain spooled on its shaft. The end of the chain hangs down over the head of the walking beam, and has drilling rods suspended on it by means of a swivel. The winch is little else but a feeding device; a cog wheel keyed to the shaft of the winch and a worm serve for letting out the drilling chain. To one end of the worm there is a

Typical oil country boiler, mounted on wheels, used in Polish drilling

*The latter two formations are very hard, and very often send the drill hole off perpendicular.

small chain wheel attached from which an endless chain hangs down to the driller's stand on the floor. By pulling on this chain the driller can turn the winch one way or another, and thus either feed or lift the bit from the bottom of the hole.

Structure Is Elastic

Sills of the rig are so connected together that they provide considerable elasticity for the whole structure. In this respect the Pole rig greatly differs from the cable rig. Stiffness of drilling rods has to be balanced by less rigid foundations, while great flexibility of wire line requires firmer construction of the entire rig. Line drums are placed about three meters above the floor, and are supported by a wooden structure (not shown in Figure 1) made out of 10 by 10-inch timber.

Standard Rig

Despite many constructional advantages standard rigs are still not very common in Poland. They are used in the same form as they are in the United States. Figure 3 shows the general outlay of an electrically driven cable tool rig used by one of the major operators in the Borysław District. This rig is also equipped with the swabbing hoist which during the drilling is used for bailing. The line shaft can be driven either by electric or by steam engine, this latter being used for emergency. The electric motor, according to safety regulation of Bureau of Mines, is placed in a separate building, in order that accidental ignition of natural gas is avoided. Two claw clutches, one on the line shaft and one on the shaft of the hoist, are to engage or disengage steam engine and hoist, respectively.

General view of the combination rig as described in the accompanying article on drilling practice in Poland

Combination Rig

A drilling rig known in Poland under the name of combination rig, is a regular Pole rig adapted for use of cable. Figure 4 shows this type of rig, and one can readily see that there is very little difference between Figure 1 and Figure 4. Addition of the third drum (Figure 4a), more rigid foundations under the rig, and proper changes of diameters of belt pulleys are adequate to make the rig suitable for cable tools. This additional drum is for bailing, while the other two (b, c) are for spooling drilling line and casing line, respectively. With the ordinary Pole rig one drum is sufficient for both the drilling and casing lines; the first of the two lines is very short as it serves for pulling out and running in short rods, and only a few wraps of this line are on the drum. Therefore, it takes very little time to take one line and put another one on. Such changing of lines, when using cable tools is not feasible because of great lengths of drilling line spooled on the drum.

Line shaft (d) shown in Figure 4, is to shorten the main driving belt, but some of the operators do not use it, and therefore they place the engine somewhat farther away from the crankshaft. In such case, of course, the diameter of the engine pulley and that of the main pulley on the crankshaft are to be changed, in order that a proper transmission ratio could be maintained.

Belt tightener for driving sand reel as used in Polish operations

Tools

Tools used by the above described rigs are very similar. A drilling bit with a stem and jars above, give a string of tools in all three instances. Bits are of two different types: 1, straight bits, and 2, eccentric bits. The first resembles a chisel and is hardly ever used. The eccentric bit, on the other hand, is the most popular with all operators. In 1906 it was tried for the first time, and ever since its usage has been rapidly spreading. Figures 5 and 6 show eccentric bits for the Pole rig, and for the cable rig, respectively. The latter kind has larger side cutters in order to secure drilling of full gauge holes. Much cavy formation encountered

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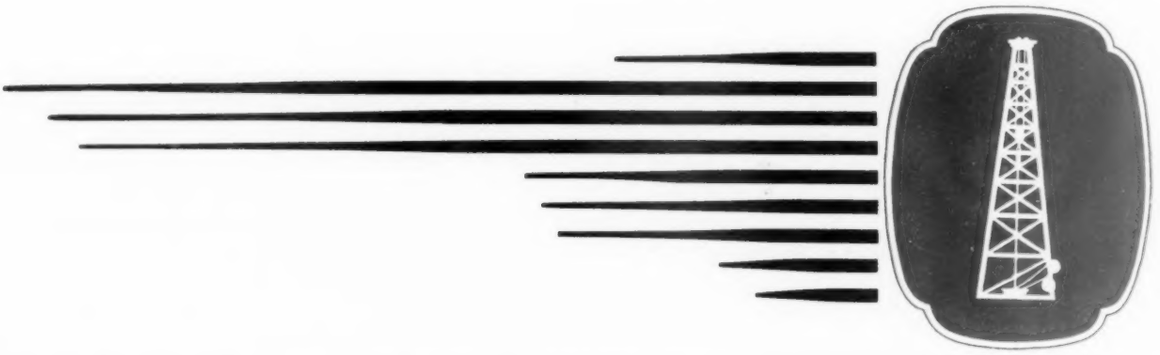

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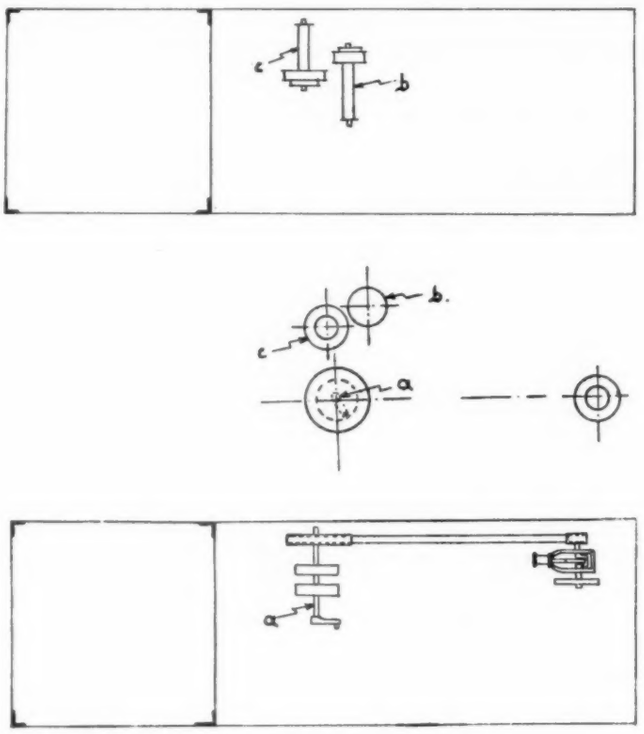

FIGURE 1

Ground plan, side elevation, and upper plan of Pole rig

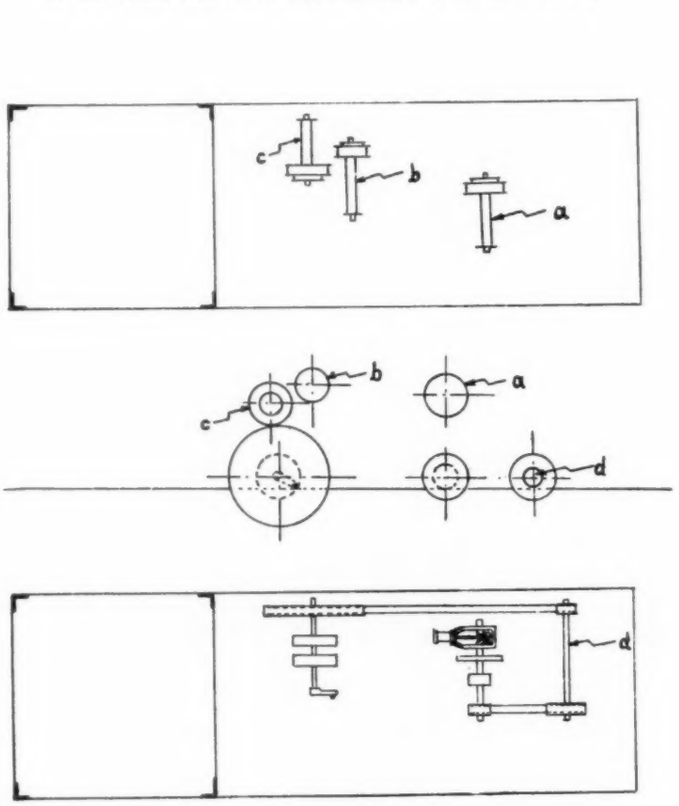

FIGURE 4

Ground plan, side elevation, and upper plan of combination rig

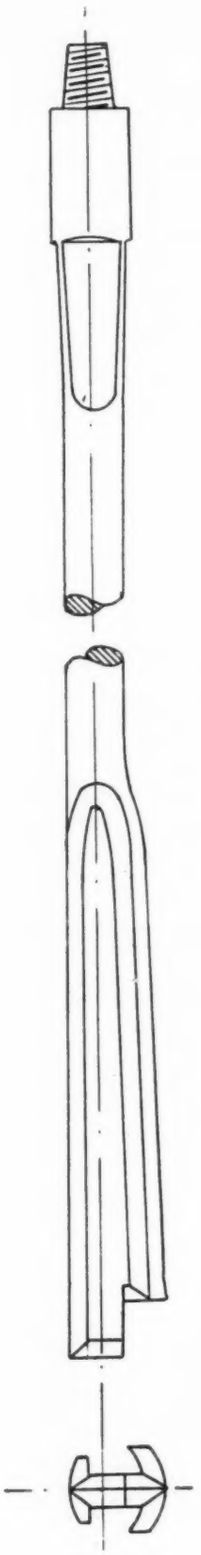

FIGURE 6

Eccentric bit welded to the drilling stem

FIGURE 7

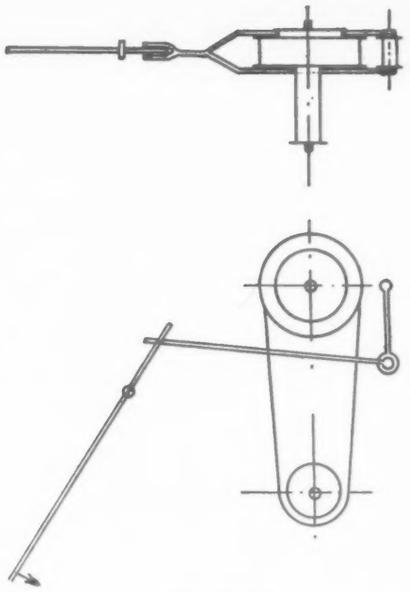

FIGURE 2

Showing belt tightener used on Pole rig

in all oil fields requires continuous carrying of the casing close to the bottom of the hole, and therefore eccentric bits are very useful because they make bigger hole and thus eliminate cumbersome underreaming. These bits also have some disadvantages. Their tool joints, especially those of smaller sizes, are more subject to breakages. This is remedied by welding bits for holes smaller than nine inches in diameter, to the stem. Slower progress of making hole, and the tendency to leave perpendicular when inclined strata of varying hardness are encountered, can be considered as other drawbacks of this particular type of bit. Besides they do not give good results in holes of less than seven inches diameter. Despite these objectionable features, however, this bit is used almost exclusively throughout all oil fields.

There is also another kind of bit whose usage, during the last few years, has been considerably spreading. Its boring action is based on a somewhat different principal than that of the other two types. This bit (Figure 7), consists of a steel club welded to the drilling stem. On the side surface of the club there are three grooves cut out, running spirally along the entire length of the club. All dimensions of the bit are standardized, and depend upon the size of the hole in which they are to be used. Diameter of the club varies from 65 millimeters for a 4-inch hole to 200 millimeters for a 12-inch hole. Depth of grooves is from 10 to 35 millimeters, and width from 15 to 50 millimeters; their length, in all instances, being the same as that of the club, i. e., 500 millimeters. Besides the bit, for drilling, there is necessary certain amount of steel balls whose size ranges from 15 to 40 millimeters in diameter. The amount to be put in before the drilling is commenced is from 10 to 90 kilometers, and if the drilling with this bit is continued for more than one day, then a supply of balls at the bottom of the hole has to be replenished at the rate of 0.75 to 10.0 kilometers every 24 hours. This, of course, depends upon the size of the drill hole, and the hardness of penetrated rock.

Drills Straight Holes

It is known from previous experience with this bit that: It always drills straight holes; it tends to straighten out crooked holes; it drills holes much larger than its own diameter; it cuts rock slower than the ordinary bit, and it cannot be used in soft formations.

There are several theories explaining these results. One says that steel balls when hit with the falling bit jump violently upward, while grooves of the bit aid them to move spirally, thus cutting larger hole. Of course, downward progress is obtained by impact of steel balls against the bottom of the hole. This theory does not seem to explain satisfactorily the straightening effect of the bit. Another theory assumes, in its reasoning, that balls constitute a ball-bearing which serves as a guide for the bit. When a hole drilled with any of the ordinary bits starts to slant, then by using "ball" bit, curvature can be removed. At first a prescribed amount of balls has to be thrown in the hole, and then drilling with the bit (club) is commenced. The balls tend to fill the hole to a certain level, and the bit on its downward stroke falls on them and meets more even resistance. Therefore it digs a new hole, and its tendency to go off perpendicular is retarded. Moreover, some of the balls, due to pounding by the bit, bounce and are in a continuous up-and-down movement, thus filling the clearance between the bit and the walls of the hole; this creates straight guiding of the bit which, in turn, tends to keep the hole straight. This theory sounds more reasonable and explains results obtained with this bit. The fact that clearance between the club and the walls of the hole is slightly more

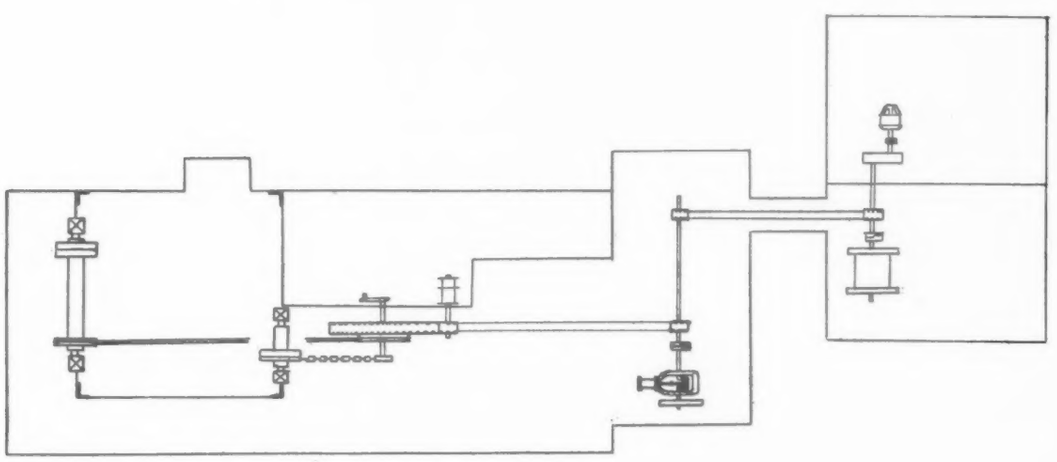

FIGURE 3

A layout of cable-tool rig, with electrical hoist for swabbing. The whole rig can be driven either by electric motor or steam engine

than the diameter of corresponding balls seems to offer certain support for this theory .

At present this bit is gaining in popularity, especially in hard and steep formations, and in holes smaller than seven inches in diameter. In such small bore holes an eccentric bit is of no avail; and therefore underreaming is necessary unless a "ball" bit is used. In soft formations, however, this method of drilling yields entirely negative results.

Other tools, besides bits, are very similar to those used on standard cable rigs, and for that reason do not require any closer description.

Perhaps the most interesting is the method of determining sizes of tool joints. They are called after diameter of pin collar (Figure 7c), other dimensions of the pin (a, b, c), and those of wrench square (d) being standardized after this main size (c). The most popular set of sizes of tool joints are: 150, 125, 102, 90, 75, 60, 55, 27 millimeters; the first six being those of drilling tols, the next two (60 and 55) of drilling rods, and the last pumping rods. Besides this set of sizes, there are other ones in use, and one can imagine how it is difficult to arrive at general standardization of tool joints. In the last few years, since American cable tools has been introduced, there is a tendency toward adoption of either A.P.I. or some other standards which could be agreed upon and recognized by all operators.

Casing

Casing used in Poland is of inserted type only. It is made in entirely different sizes than those used in the United States. Following table gives the most frequently used sizes.

Table 4

Approximate diameter, inches	18″	16″	14″	12″	10″	9″	7″	6″	5″	4″
Outside diameter, millimeter.	456	406	355	305	267	229	200	161	130	102
Inside diameter, millimeters.	432	390	339	290	253	214	184	148	118	88
Thickness, millimeters	12	8	8	7.5	7	7.5	8	6.5	6	7

For abbreviation, size of casing is called by approximate diameter expressed in inches. Besides the above enumerated sizes, there are other makes of casing of somewhat different dimensions, with either left-hand or right-hand thread.

Due to both the caving character of formations and the method of drilling, many strings of casing are necessary in order to reach deep sand in the Boryslaw district. One of the most frequently used casing programs in this particular field is as follows:

From 0 to 50 meters.....18 inches
From 0 to 200 meters.....16 inches
From 0 to 450 meters.....14 inches
From 0 to 600 meters.....12 inches (water shut off)
From 0 to 850 meters.....10 inches
From 0 to 1100 meters.....19 inches
From 0 to 1300 meters..... 7 inches (water shut off)
From 0 to 1500 meters..... 6 inches (oil string)

Some Casing Recovered

Despite a great number of strings of casing, not all of them are left in the hole. Usually such strings which either shut the water off or serve as oil strings entirely, remain in the hole. Other strings that are to protect the hole from caving in, are being cut off at the place where another larger string begins, and then the upper end is pulled out and recovered. If it is desirable to pull out the remaining part of the string that was previously cut off a casing spear is suspended on heavy rods, made to order, usually about 50 millimeters in diameter. In case of a frozen string a set of specially designed screw jacks is used in order that a greater pull can be obtained. Hydraulic jacks, despite greater efficiency, are not used for this purpose.

Elevators for casing were not known until 1924, and even now they are not very popular. Instead of elevators, lifting nipples are used. Making up and breaking out of these nipples consumes a great deal of time, and one can easily imagine how any operation with casing is slowed down. Elevators had been introduced from the United States, together with cable tools, and now they are slowly entering into drilling practice. Casing tongs, another auxiliary tool for quickly making up casing, are also frowned upon; manual power acting on a long wooden pole is still preferred for this purpose. Sometimes as many as 12 or more men are needed to run in a string of casing, and the hole operation, of course, lasts several days. Casing spiders are usually set on the derrick floor, no cellar being used for it. When a certain string of casing is not to be run

TABLE I*
Comparison of rate of drilling with different methods

Year	Number of Pole rigs	Average monthly amt. of hole per one well	No. of cable rigs	Average monthly amt. of hole per one well	Number of combination Rigs	Average monthly amt. of hole per one well
1927	49	22.11 meters	9	63.62 meters	22	74.90 meters
1928	46	18.59	12	67.28	23	63.44
1929	23	20.02	10	65.66	25	65.60

*This table refers only to the Boryslaw District. Data comprise, drilling wells, deepening wells, and those fishing for lost tools.

TABLE II*
Monthly average figures indicating state of wells

Year	Drilling Wells	Deepening Wells	Fishing Wells	Total	Fishing in per cent of total
a) All oil fields of the country.					
1926	120	80	49	249	19.8 per cent
1927	131	73	42	246	17.7 per cent
1928	119	29	50	198	25.2 per cent
1929	116	53	43	212	20.3 per cent
				Average:	20.7 per cent
b) Boryslaw District.					
1926	51	57	32	140	22.9 per cent
1927	48	43	36	127	28.3 per cent
1928	45	41	37	133	27.3 per cent
1929	34	29	24	87	27.5 per cent
				Average:	26.5 per cent

*This table gives average numbers of wells in each month throughout every corresponding year.

TABLE III*
Comparison of costs of drilling with two different methods
(all costs expressed in terms of U. S. money)

Name of the field	Depth in meters	Time of drilling in months: Pole tools	Time of drilling in months: Cable tools	Total cost of drilling: Cost of casing	Total cost of drilling: Pole tools	Total cost of drilling: Cable tools	Cost per one meter: Pole tools	Cost per one meter: Cable tools	Saving of costs through adoption of cable tools
Shallow fields ...	150	2	..	1290.	2855.	.....	18.	....	..
Rypne	750	6	..	7500.	19055.	.....	18.50	....	..
Krosno	800	14	9	11670.	21780.	21270	27.20	26.50	2.4 per cent
Bitkow 1100		30	17	13770.	37430.	33410	34.20	30.40	11.0 per cent
Boryslaw 1500		36	18	28620.	75020.	64120	50.10	42.70	14.5 per cent

*After Prof. Bielski's article printed in "Przemysl Naftowy".

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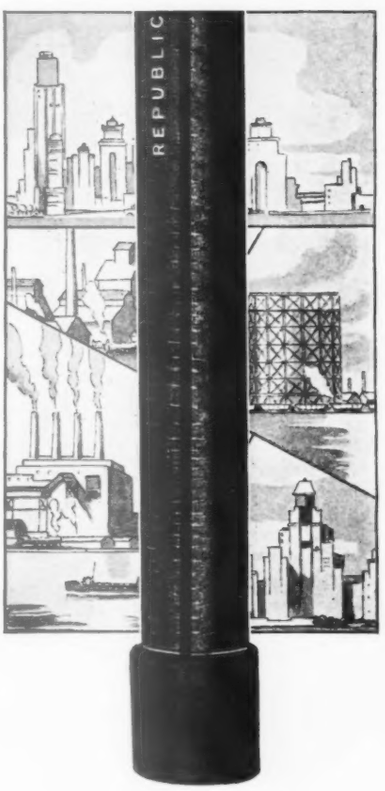

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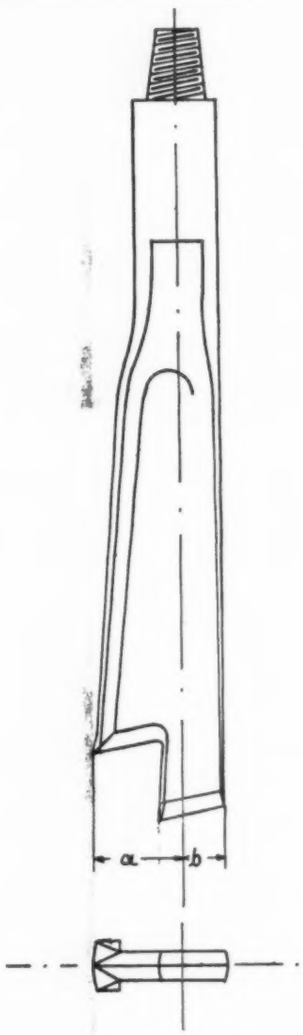

FIGURE 5

Eccentric bit. Eccentricity equals (a) *less* (b)

in it is set on bottom of the hole, and no casing clamps are used to support its weight.

Shutting off top waters, as a rule, does not present any difficulties. It is accomplished in the following manner: At first, a hard and impervious rock is to be found. Then in this formation several feet are made with an insufficiently tempered bit which causes the hole to become somewhat conical at its bottom. Finally, a certain amount of sticky clay is thrown in the hole and casing firmly set. Sometimes, in order to drive all the clay behind the casing, the shoe is provided with a wooden plug. Water shut-offs by means of cementing are practically unknown, and hardly necessary, while the above described method gives satisfactory results in almost all instances.

Drilling Routine

Since cable tools have been introduced, drilling rigs and tools have become greatly modified. Also general drilling routine has undergone certain changes. At the present time when a well is being started, drilling rods are used to the depth of about 50 meters and are then replaced by cable. For almost any fishing job rods are exclusively used, because operators maintain that it is easier to manipulate with fishing tools when they are hanging on stiff rods. Besides this, they believe that by using rods at the very beginning of drilling, they can avoid crooked hole; and this is why they prefer a combination rig which is well adapted for both cable and rods. In the last year, however, there could be noticed a tendency toward use of standard rigs, and it is very probable that this type of rig will finally replace all combination and pole rigs.

Table III shows comparison of the costs of drilling with both cable and pole tools, in different fields. One can see that cable tools make for lower drilling costs by from two to 15 per cent. This table was compiled some three years ago, i. e., in the time when the cable system was comparatively new, and operators were not very experienced. It is believed that by now the ratio of costs is much better than the above.

Drilling progress is very different, in the Boryslaw district it takes from eight to 18 months to make a hole 1500 meters deep. This is perhaps the best result one can obtain with cable tools.

Drilling operations are greatly handicapped by lack of proper materials for manufacturing tools. This is reflected in great number of wells fishing for lost tools (see Table II). Such fishing wells represent from 20 to 28 per cent of total of all drilling jobs. Increase of fishing jobs in 1927 can be explained by considerable number of cable-tool rigs (either standard or combination) which at that time were newly introduced, and therefore not very well known to the operators. Some of the fishing jobs very often last as long as one year or more. Most fishing jobs are caused by failure of tool joints.

Prospects for Rotary

At the time this article is written, there is one well that is being drilled with rotary tools. No exact information is available, but it is evident that progress of drilling is not very encouraging, perhaps 100 meters of hole per month can be considered as a fair, average figure. An entirely inexperienced drilling crew, and too old and obsolete equipment cause results that are not as good as expected. However, the author believes that rotary can be used to great advantage. Cable tools are giving the best results to be obtained. Perhaps better material for drilling tools, and introduction of time saving devices such as elevators and casing tongs can somewhat improve results already obtained with cable tools; but the method will remain the same, and past certain limit one cannot expect any shorter drilling time.

Formations that are to be drilled do not offer such extreme difficulties for the rotary, as are believed by operators. There are other reasons, however, which prevent adoption of otary. Poland's oil fields are in their aging stage and small initial production of wells cannot pay for expensive rotary equipment. Furthermore, the factor of time is comparatively of very little value in this country. An average operator does not care whether a well is completed within one year or two years. It was not so very long ago when drilling a well of an average depth of 1500 meters lasted several years, and therefore, three times better drilling time obtained by now with cable tools seems to be sufficient for present conditions existing within the Polish oil industry. Savings of the cost of labor* and fuel, resulting from faster drilling with rotary, are too low to offset high initial cost of the equipment. But after all, it is necessary to do a good deal of experimenting with rotary, in order that operators can be won over to this up-to-date drilling method.

*Cost of labor of three shifts of drilling crews is from $500 to $600 per month. There are employed on a cable rig: three drillers, six helpers, one tool-dresser, three helpers, three firemen.

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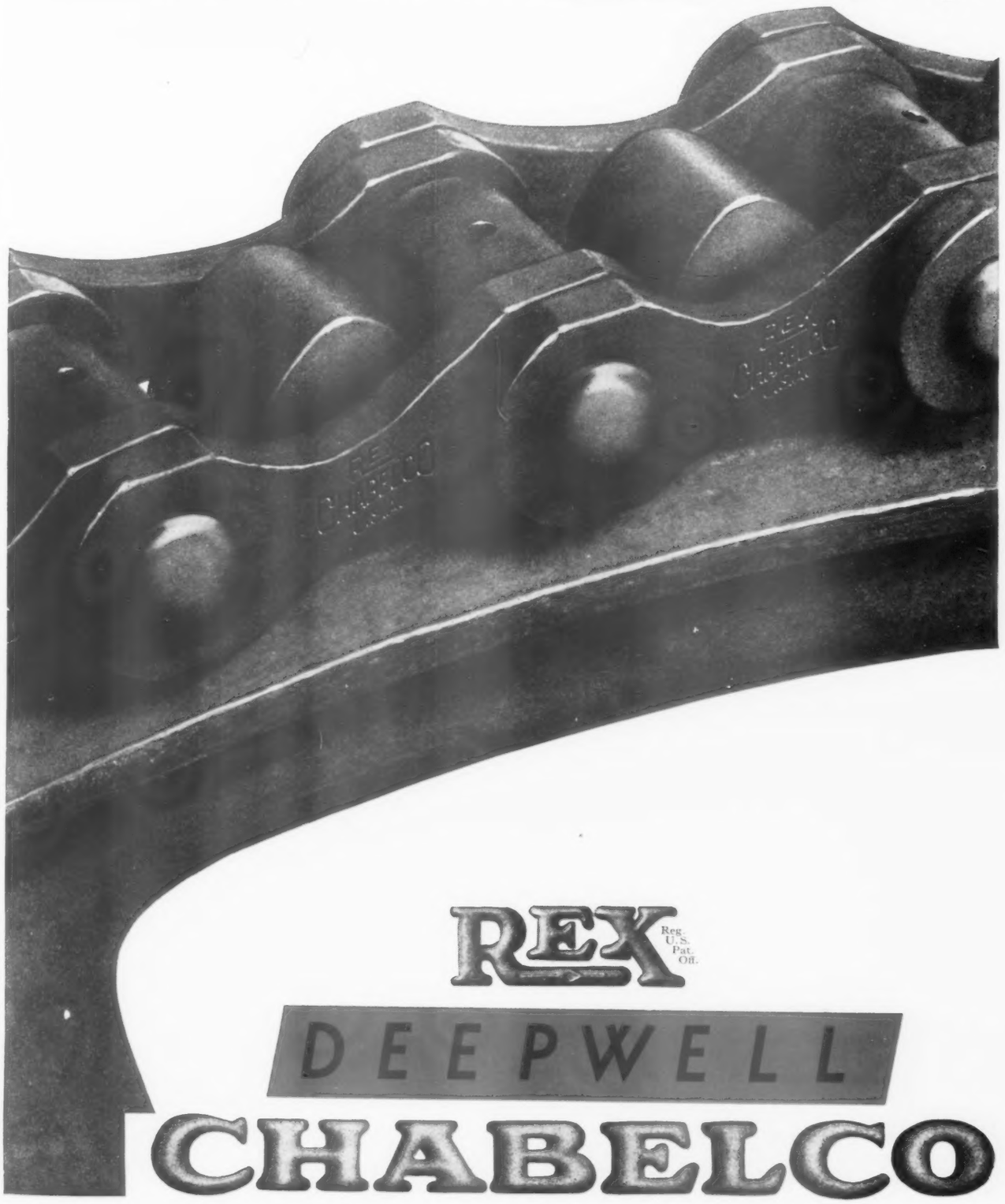

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DEEPWELL

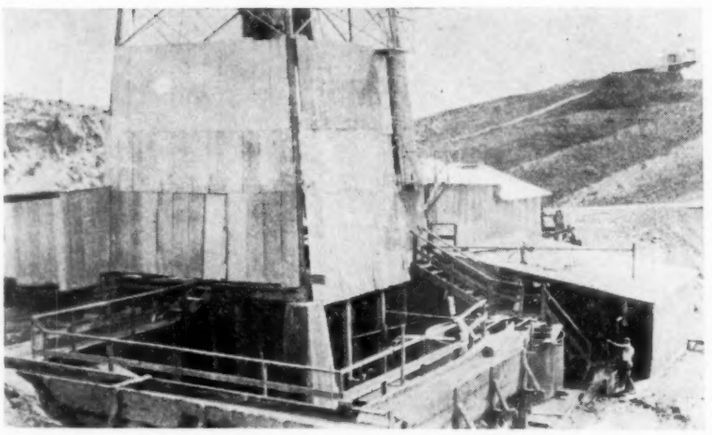
CHABELCO

Elevated Derrick Floor Eliminates Cellar

Danger of Gas and Blowouts Minimized

By BRAD MILLS
Staff Representative

ELIMINATION of the long-familiar cellar through the medium of an elevated type of derrick floor and heavy bracing has been achieved in the Kettleman Hills field, and the practice apparently holds possibilities in districts where very high gas pressures are encountered. Past experience has revealed the dangers lurking in inaccessible cellars, one blowout on the North Dome having been aggravated by the absolute collapse of the derrick and Christmas tree assembly. Petroleum engineers had been considering various types of elevated derricks for some time, but the Kettleman Hills installations were first to make their appearance in California fields, with the possible exception of one in the North Belridge field.



Location favored elevation of the derrick on Pacific Western Oil Company's No. 12 at Kettleman Hills, but the apparent advantage and safety of having room under the derrick floor above ground may offset the elevation of equipment—it has to be raised some anyway

Two wells, Pacific Western Oil Company's No. 12, and Milham Exploration Company's No. 23, were first to adopt the new elevated type of derrick foundation. The latter has a modified type of cellar, but the derrick floor is built to allow free movement completely above ground. In both cases, the steep hillsides have been capitalized to minimize excavation details, the approaches and casing racks naturally having been placed on the elevated side of the derrick.

The need for additional room during emergency changes, danger of gas in small cellars and need for a greater safety factor in case of blowouts were some of the major reasons for the new type of well foundation. The influence of pier construction in the Elwood field may be seen, although the Kettleman Hills wells took advantage of a natural terrain to provide additional space below the derrick floor.

Pacific Western Oil Company's No. 12 is being drilled without the cellar, removal of a small portion of the hillside providing a full opening under the derrick floor. A full concrete floor adds support to the derrick floor above and provides a clean footing for operations not ordinarily carried out on a level which approximates the standard cellar bottom. Heavy wooden bracing is used in an upright position, with the center space below the derrick floor being left clear for usual or emergency operations.

The arrangement has led to a novel pump installation and a slight change in the circulation system. The mud pumps have been placed on a level with the concrete floor and a short distance from the derrick. A pump house has been built below the engine house and the action of the pumps in no way affects the derrick. The usual pump position is roughly on the same level as the derrick floor, this new arrangement placing them about 12 feet below the derrick floor and on a concrete floor. The mud tank also rests on the same level as the pumps and the concrete floor beneath the derrick, being immediately below the derrick.

Milham Exploration Company's No. 23 uses the hillside to good advantage in achieving a novel derrick foundation. A portion of the hill is cut away to give a clearance of about 12 feet between the derrick floor and full concrete floor. A small cellar has been provided but technically it does not serve the full purpose. The derrick rests first on concrete pillars, but the bracing arrangement is unlike any previously used. Two 24-inch I-beams run immediately under the regular derrick floor I-beam bracing and at right angles to it. These very heavy beams are just far enough apart to permit passage of conductor pipe. Midway between these 24-inch I-beams and the parallel sides of the derrick are lighter 10-inch H-beams. The 24-inch I-beams are each supported by four eight-inch upright H-beams. Each 10-inch H-beam is supported by four six-inch upright H-beams.

The bracing is arranged so that the space near the well and what would normally be the cellar is unobstructed.

Since both elevated derricks at Kettleman Hills have taken advantage of hillsides to obtain the cut-away effect, the casing and equipment racks naturally have been placed on the higher side of the layout. On level ground, this phase of drilling might cause some concern, but one operator stated that the benefits of the arrangement should easily offset the expense of elevating casing and equipment to the derrick floor.

The March of « « « Engineering Progress

October Issues of The Oil Weekly carried special articles on Engineering Problems as follows:

Advanced Methods and Equipment at Oklahoma City
by W. A. Sawdon, Petroleum Engineer

Geophysics and Deep Drilling Shape Destiny of Gulf Coast
by Jack Logan, Staff Writer

Van Field Example of Unit Efficiency
by W. C. Morris, Staff Writer

Larger Horsepower Ratings for Drilling and Pumping
by H. W. Dralle, Petroleum Engineer

Concordia Long Stroke Pump for Deep Wells in Roumania
by Roy E. Leigh, Associate Editor

Uniform Controlled Flow of Oil vs. Intermittent Open Flow
by I. B. Williams

Central Mud Cleaning Plant Proves Value of Elaborate Reclaiming Method
by Brad Mills, Staff Writer

Repressuring and Initial Pressuring
by H. C. George, Prof. Petroleum Engineering, University of Oklahoma

Automatic Control Head Makes Possible Running or Pulling Tubing Under Pressure
by Staff Writer

The Why of Clockwise and Counter-Clockwise Pumping
by L. A. Little, Mechanical Engineer

Feature, "Modern Equipment at Exposition"
by Staff Writers

Control of California Oil Curtailment.
by Robert E. Allen, Assistant Umpire California Proration

Vibrating Screen Cleans Mud; Makes Big Saving
by Brad Mills, Staff Writer

Mushrooming of Salt Domes, a New Theory
by Jack Logan, Staff Writer

Hook-Off Adjuster Popular at Burbank
by Floyd Swindell, Staff Writer

Effects of Edgewater on Recovery of Oil
by H. H. Wright, Petroleum Engineer, Gypsy Oil Company

Oilwell Shooting Methods and Equipment
by W. F. Cloud, Asst. Prof. Petroleum Engineering, University of Oklahoma

Development Program in Part of Ventura Oil Field
by Joseph Jensen, Chief Petroleum Engineer and F. W. Hertel, Petroleum Engineer, Associated Oil Company

Khanaquin Oil Company Mixes Mud Scientifically in Iraq
by Roy E. Leigh, Associate Editor

Salt Water Turned to Account in Rotary Drilling in Persia
by Roy E. Leigh, Associate Editor

"Gas Chaser" Removes Noxious Fumes from Derricks in Mesopotamian Operations
by Roy E. Leigh, Associate Editor

Fighting Fires Before They Start in Iraq
by Roy E. Leigh, Associate Editor

Four Grades Through Gasoline Line Without Mixing
by Staff Writer

Keep Close Tab on Power Costs on Record Electric Well
by H. J. Struth, Staff Writer

Increasing the Ultimate Recovery of Oil
by S. F. Shaw, Consulting Engineer, Carter Oil Company

November issues of The OIL WEEKLY will present our readers with some very interesting papers prepared for the annual meeting of the American Petroleum Institute. Some of the best engineering information made available each year comes from these A.P.I. papers. You will find them beginning with next week's issue.

For over a month a staff writer has been engaged in developing data, assisted by a number of eminent geologists, on an area that has received no attention to date from oil publications. The results of this staff writer's work will appear in two or more articles, beginning this month.—*The Editor.*

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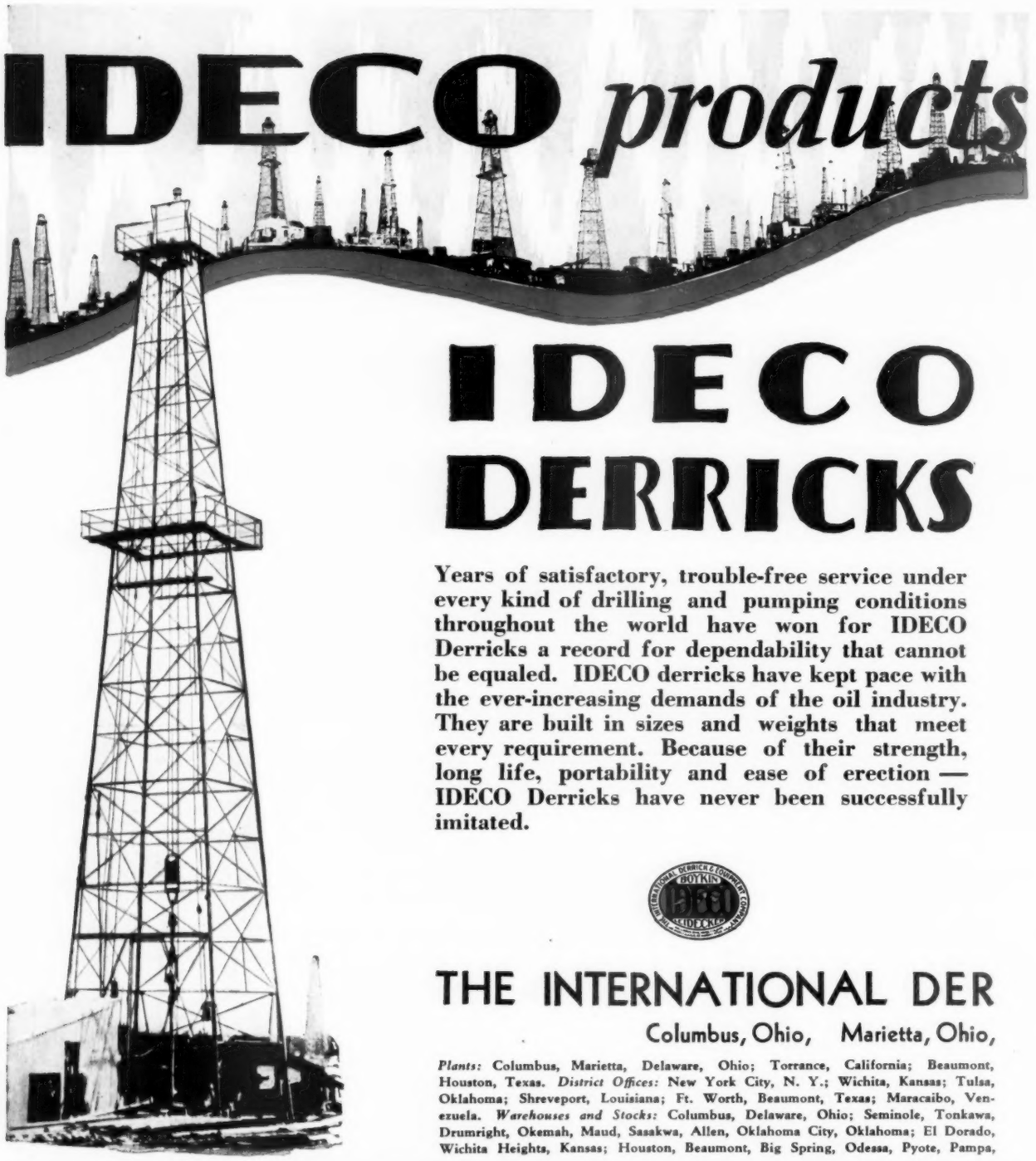

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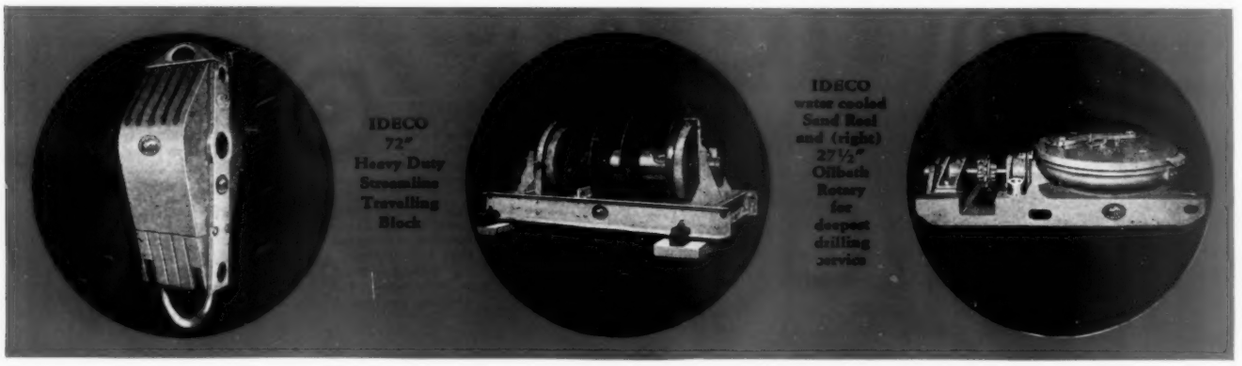

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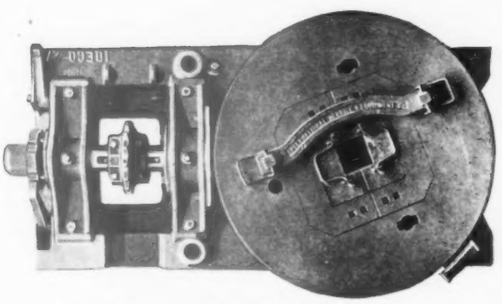
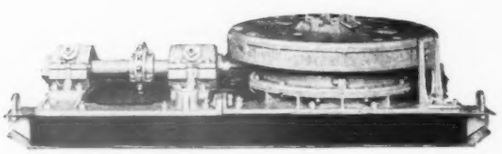
IDECO 27½″ Oilbath Straight Rotary



Top view of Oilbath Straight Rotary



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Characteristics of Drilling Fluid

By C. P. PARSONS
Halliburton Oil Well Cementing Company, Duncan, Oklahoma

CONCLUSIONS reached by Mr. Parsons in this article are:

1. In order to account for the various characteristics of drilling muds obtained in different areas and geological horizons, study must be made from both a chemical and physical standpoint.

2. That science teaches us that there are three states of division into which these solid constituents or particles may be grouped, viz: the suspended state; the colloidal state; and the crystalloidal state.

3. That the suspended state is one wherein the particles are fairly large and are present in molecular complexes, having none of the properties of colloids or crystalloids.

4. That as the state of division approaches but does not reach a molecular simplification, the term "colloidal state" is used to describe the condition.

5. That in the crystalloidal state of division, the individual particles are known as crystalloids, and are held in true solution, being usually present as single molecules or ions.

* * *

This paper was prepared for delivery before the Tulsa meeting, 1930, of the Petroleum Section of the American Institute of Mining and Metallurgical Engineers. The Institute has invited discussion of this paper by its membership, and THE OIL WEEKLY *will be pleased to consider publication of such discussions from any of its readers.*

TO properly account for the various characteristics of drilling muds obtained in different areas and geological horizons, it is necessary to study the composition of the mud from a chemical and physical standpoint as determined by the proportions and activities of the various solid constituents that are present in various states of divisions.

Briefly summarized, science teaches us that there are three states of divisions into which these solid constituents or particles may be grouped; namely, the suspended state, the individual particles of which are known as suspensoids; the colloidal state, in which the individual particles are termed colloids; and the crystalloidal state, wherein the individual particles are held in true solution and are termed crystalloids.

The suspended state, wherein the individual particles are known as suspensoids, is one where in the particles are fairly large and are present as molecular complexes, having none of the properties of colloids or crystalloids. Since matter varies in physical character and in chemical activities with its state of division, these coarser particles or suspensoids do not themselves materially affect the physical or chemical properties of the solution in which they are suspended. On the other hand, they are distinctly detrimental in drilling muds and it is desirable that they be removed. Under the general classification of suspensoids are included sand, gravel and cuttings which contribute nothing to the colloidal stability or other desirable properties of the drilling fluid.

As the state of division approaches, but does not reach a molecular simplification, the term "colloidal state" is used in describing this condition. The colloidal state, the individual particles of which are known as colloids, arises when one form of matter is in a very fine state of division and is distributed through a second phase. The material in the finely divided state is called the dispersed phase, while the liquid in which it is dispersed is called the dispersive phase. These particles of matter are in a colloidal state and will not settle out from the dispersive phase so long as colloidal conditions are stable. Moreover, they exhibit the property of having an oscillating movement around a central position in solution (the Brownian movement.)

The third state of division is the crystalloidal state, the individual particles of which are known as crystalloids. These particles are held in true solution and are usually present as single molecules or ions. In a drilling fluid the water content of the fluid contains considerable crystalloidal matter, usually in the form of soluble salts. Solutions of crystalloids have different physical properties, in so far as boiling point, vapor pressure, etc., are concerned, from the solvent in which the crystalloids are dissolved. Colloids, on the other hand, exert very little or no effect on the physical constants of the dispersive medium. Some colloids have absolutely no effect on these properties, while others do possess such influences to some degree; depending on whether the colloidal particles more nearly approach the suspended or crystalloidal states, respectively.

Colloids are very susceptible to coagulation by chemicals, heat and electrolytes and possess great absorptive and adsorptive powers. These properties are of extreme importance in rotary drilling fluids and present a formidable basis for unlimited study. The latter part of this paper presents some interesting laboratory results along this line.

Properties of Drilling Fluids

One form of flocculation or agglutination of colloidal materials in drilling fluids is due to neutralization of the electric charges which these materials carry. For instance, a clay suspension having negatively charged colloidal particles is flocculated by materials carrying positive charges. Since like charges repel and unlike charges attract, mixed charges vary in stages of neutralization and flocculation. Such properties present possibilities for chemical treatment of rotary drilling fluids whereby thickening or thinning may be obtained by the proper selection and combination of chemical reagents. In addition to the effect of electric charges, there are other influences brought about by ad-

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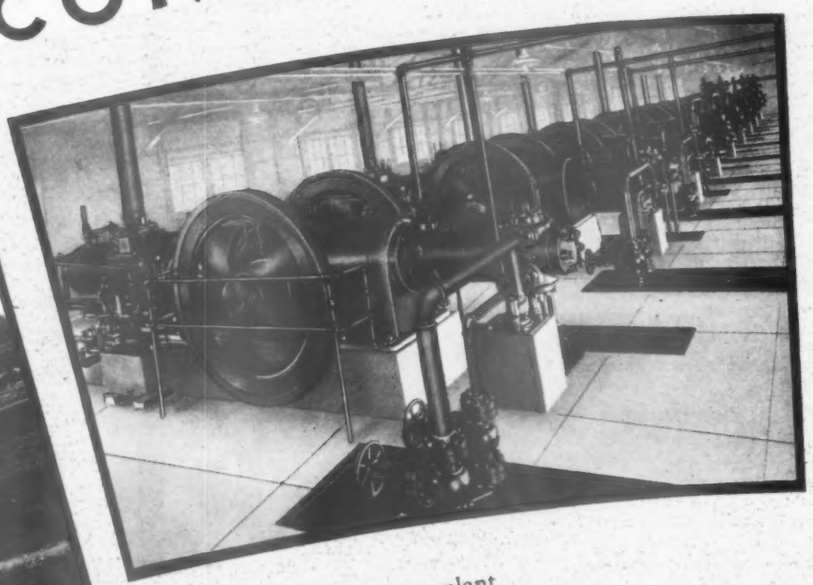

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sorption, which can be made to either sensitize a colloid to where it is more easily flocculated (precipitating a gel on the interfaces of the particles) or which may act as a protective agent to retard flocculation and increase the stability of the colloidal suspension.

In drilling fluids we are concerned with colloids having the property of combining with water solutions to form gels. Gel is the general term for a solid or semi-solid colloidal state; gelatinous precipitates and jellies being two forms of gels.

A stable colloidal solution as applied to drilling fluids, consists of very fine solid particles kept from settling by a protective film or agent, usually either protective colloids or electrolytic action or both, such condition being sufficiently rugged to constantly withstand the severe mechanical agitation and chemical contamination imposed on the fluid while drilling.

When the colloidal state of the solid particles in a drilling fluid is disintegrated by chemical rather than by mechanical or electrical means, this disintegration is called peptization. Certain salts, when picked up by the drilling fluid from salt water in a well act to peptize unstable colloids, destroying the forces of cohesion and adhesion.

The formation of gels within a drilling fluid increases the viscosity of the fluid and also contributes to the stability of the suspended particles. In some instances a drilling fluid will be deficient in these gel forming bodies, hence the solids will settle out freely, while in other instances the gel-forming bodies may be present in such large proportions that they make the mud unduly viscous and thereby prevent the settling out of sand and cuttings and the release of occluded gas. Natural muds from different areas vary widely in the proportions of these gel-forming bodies they contain, hence have very different characteristics. In general the natural drilling muds of Kansas, Oklahoma and North Texas grade from suspensoids to medium colloids while Gulf Coastal areas yield some very highly colloidal muds at certain horizons. Figure 1 indicates graphically the colloidal qualities and other characteristics of six samples of drilling fluids obtained in various areas.

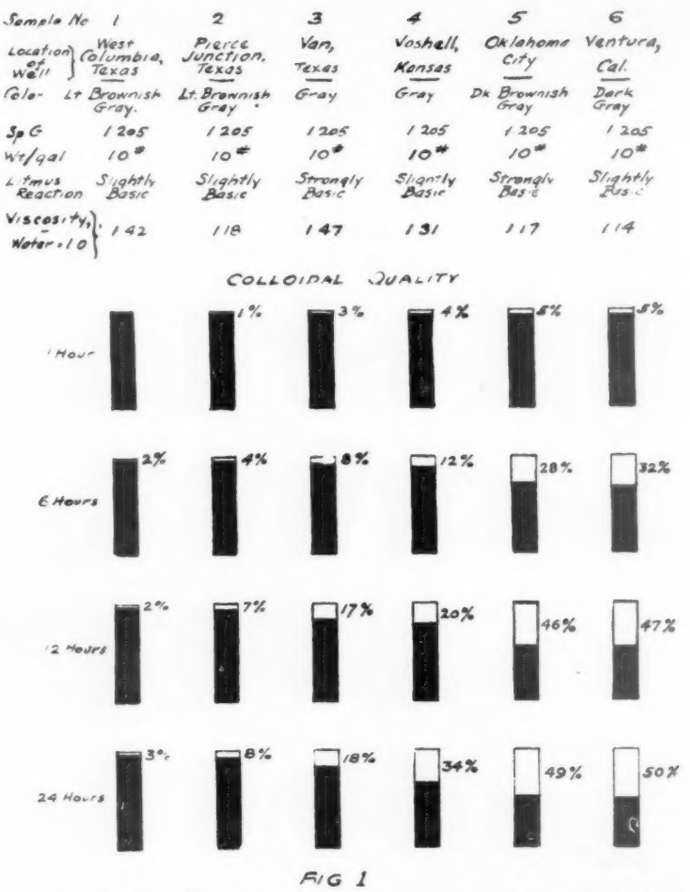

Sample No 1 2 3 4 5 6
Location of well West Columbia, Texas | Pierce Junction, Texas | Van, Texas | Voshell, Kansas | Oklahoma City | Ventura, Cal.
Color Lt Brownish Gray. | Lt. Brownish Gray | Gray | Gray | Dk Brownish Gray | Dark Gray
Sp G 1.205 | 1.205 | 1.205 | 1.205 | 1.205 | 1.205
Wt/gal 10# | 10# | 10# | 10# | 10# | 10#
Litmus Reaction Slightly Basic | Slightly Basic | Strongly Basic | Slightly Basic | Strongly Basic | Slightly Basic
Viscosity, Water = 10 1.42 | 1.18 | 1.47 | 1.31 | 1.17 | 1.14
COLLOIDAL QUALITY
1 Hour 1% 3% 4% 5% 5%
6 Hours 2% 4% 8% 12% 28% 32%
12 Hours 2% 7% 17% 20% 46% 47%
24 Hours 3% 8% 18% 34% 49% 50%

FIG 1

Figure 1 shows the characteristics of six samples of natural drilling fluids taken from wells in various areas

Control of Fluid Properties

In some instances it is desirable to increase the gelatinous bodies within a drilling fluid and this is done either by the addition of chemicals which will react with some of the naturally occurring constituents of the mud to form gelatinous bodies, or through the addition of Aquagel or other materials which form gels when combined with water.

On the other hand, in the treatment of muds

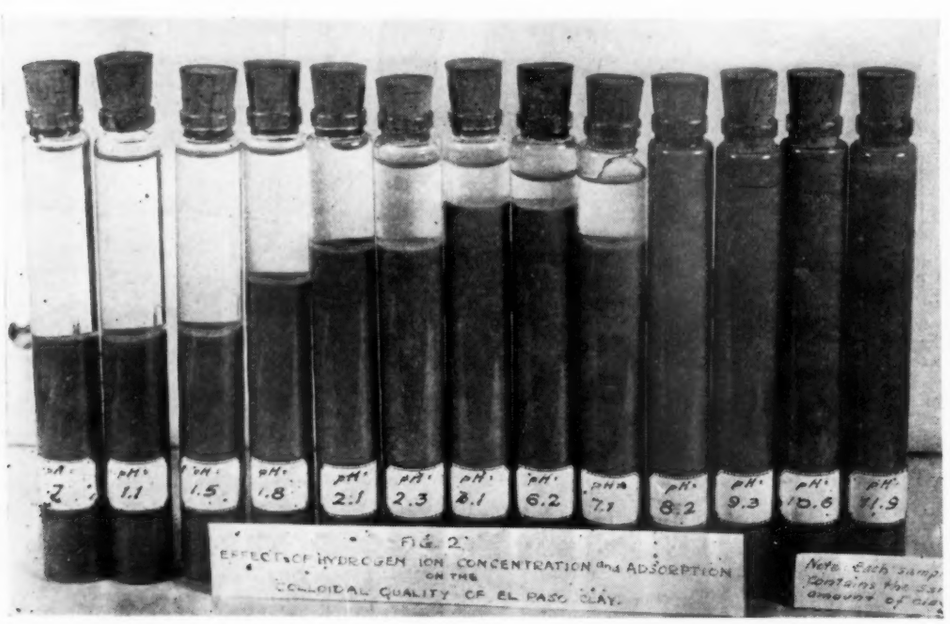


Figure 2 photographically shows the actual effect of both hydrogen ion concentration and adsorption on the colloidal quality of El Paso clay. Each sample shown contains the same amount of clay.

which are unduly viscous, having excessive proportions of colloidal gelatinous bodies, it is necessary to add chemical reagents which will modify the cohesive and adhesive effects within the mud. This applies, of course, to cases where it is desired to keep the weight constant, and also to cases where it might be desirable to decrease the viscosity in order to increase the weight by the addition of weighting material. This will allow the viscosity of the mud to be decreased to a point where sand, cuttings and occluded gas are more readily released, although the stability of the colloidal suspension is not materially decreased. Accompanying this change in viscosity there would be a decided easing up in the load on the pumps.

On one type of compound[1] now used in the Gulf Coast area for the chemical treatment of high viscosity drilling fluids, the viscosity is lowered to allow release of cuttings and prevent gas cutting or for the addition of weighting material, but the colloidal state of the fluid is further stabilized by the presence of a second colloid, which is strongly adsorbed by the clay particles and acts to protect the particles from the influences tending to cause coagulation or agglutination. It also imparts to the drilling fluid, the property of forming a soft gel when the mud is quiet, such as when the drill stem and pumps are stopped. This gelling property acts to prevent sand and cuttings from settling to the bottom of the hole and possibly sticking the drill pipe. Upon being slightly agitated the mud returns to a highly fluid condition that is easily handled by the pumps.

It is reported[2] that recently in a field south of Beeville, Texas, a well was drilling at about 5500 feet in a formation that made a thick viscous mud, which with weighting material, weighed 12 pounds per gallon. A high pressure gas sand was then penetrated and the mud became gas cut and threatened to blow out whenever an attempt was made to remove the drill stem. After a number of unsuccessful attempts to remove the drill stem, chemical treatment was resorted to which thinned the mud without decreasing the weight of the fluid. This thinning released the occluded gas and then allowed the addition of more weighting material to 14 pounds per gallon. The drill stem was then removed. This illustration is presented to show a phase of the practical side of the subject.

In the chemical treatment of a drilling fluid the chief objective is to obtain a colloidally stable fluid of a desired viscosity and weight; the viscosity having a nature of slickness instead of stickiness, which allows a more ready release of cuttings, sand and occluded gas.

Effect of Hydrogen Ion Concentration and Adsorption

Theoretically, clay particles reach a state of maximum dispersion in a fluid when alkali is added in sufficient quantities to raise the pH value (hydrogen ion concentration) to above nine. If that condition alone held true, the addition of an alkali to drilling fluids would be expected to thin the mud.

Actually, however, in many natural drilling fluids, the reaction is entirely different. In such cases the addition of alkalies or alkaline salts produces flocculation and in-

[1]Stabilite.

[2]T. B. Wayne, Chemical Engineer, Houston, Texas, personal communication.

Rotary Drilling Mud

One of the most interesting subjects to receive attention at the hands of engineers during the past few months, and of particular interest at this time in view of the prominence given it by the several petroleum engineering organizations in their programs. In this issue appears an article by C. P. Parsons, before the American Institute of Mining and Metallurgical Engineers, and below are listed a number of articles on this subject which appeared in THE OIL WEEKLY *during recent months.*

MUD WEIGHT MAINTAINED BY SPECIAL AERATING PROCESS
August 30, 1929—Page 27
Detailed explanation of the process as followed in the Rincon field of California. The large amounts of oil and gas encountered have made it necessary to frequently renew the mud or recondition it. The reconditioning process has been solved by constructing a series of lines so the mud runs through a cooling tower and into a cleaning by-pass from which the mud is carried into a slush pit ready for use again.

* * *

HYDRAULIC MINING METHODS FOR MIXING ROTARY MUD
By ROY E. LEIGH
February 14, 1930—Page 38
The mud fluid problem in the Mene Grande field of Venezuela has been solved by Caribbean Petroleum Company by the finding of a suitable deposit of clay convenient to the center of operations and installing all necessary equipment for the mining of this clay. Pumps are hooked up so that the mud may be pumped through mud lines to the field lines which supply the wells. Water is applied under pressure to the bottom and the walls of the pit so that the clay particles are cut away and cause the mixing of the mud and water.

* * *

ADMIXTURES IN ROTARY MUD
By C. P. PARSONS
June 20, 1930—Page 34
Effectiveness in the use of chemical reagents and admixtures lies in the proper choice and proportioning of suitable materials.

* * *

TREATMENT OF MUD FLUID IN CALIFORNIA
By BRAD MILLS
June 27, 1930—Page 31
Deals with the methods of treating muds in four of the California fields. The use of settling basins, central mud mixing plants, vibrating screens, mud storage tanks, mixers and classifiers is discussed, showing methods of operation and application to particular problems of each field.

* * *

CENTRAL MUD CLEANING PLANT PROVES VALUE OF ELABORATE RECLAIMING METHODS
By BRAD MILLS
October 10, 1930—Page 56
Continuous operation for three months of a central mud cleaning plant by Associated Oil Company in the Ventura field has proven the value of this method of operation and indicates the probable installation of other such units in other fields.

* * *

VIBRATING SCREEN CLEANS MUD—MAKES BIG SAVING
By BRAD MILLS
October 17, 1930—Page 25
The installation consists of a screen cloth mounted on a steel frame and a small electric motor. The frame is mounted on coil springs so that the mud circuit in passing over it is subjected to a sifter-like action which causes the foreign matter to fall off the end of the into a chute and the mud to be washed through the screen into the mud ditch.

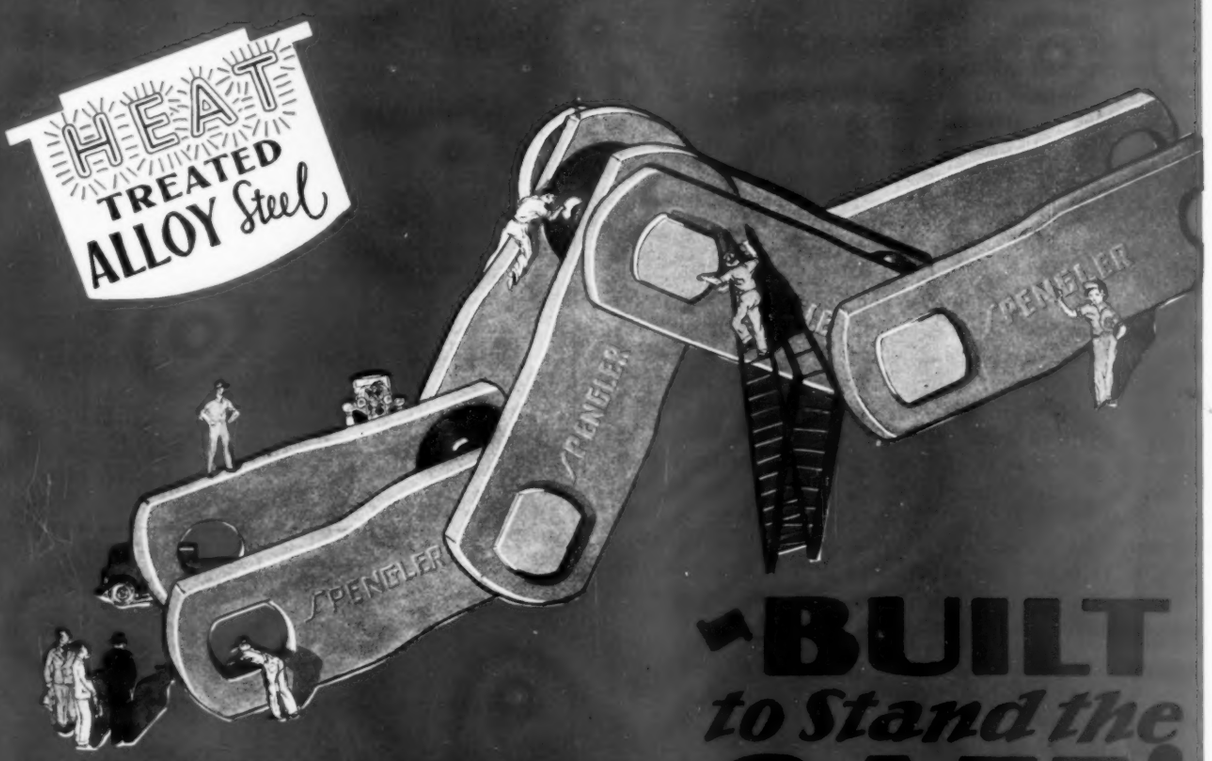
* * *

KHANAQUIN OIL COMPANY MIXES MUD SCIENTIFICALLY
By ROY E. LEIGH
October 31, 1930—Page 26
Because of the impracticability of hauling mud such long distances where there are poor transportation facilities available, oil companies in Iraq have resorted to the use of small pulverizing machines for pulverizing shale for use in mixing of mud slush. The mixing of barite, iron oxide, aqua gel, and other dry chemicals in the right proportions with the ground shale has been necessary to prepare a suitable mud for this country. This mud is mixed with salt water to eliminate cavings in the wells because of absorption of salt from the walls of the wells when fresh water is used. Iraq Petroleum Company is using hydraulic method of mixing mud as employed in the Mene Grande field in Venezuela.

Also see pages 77 and 84, this issue.

ROTARY CHAIN

SPENGLER



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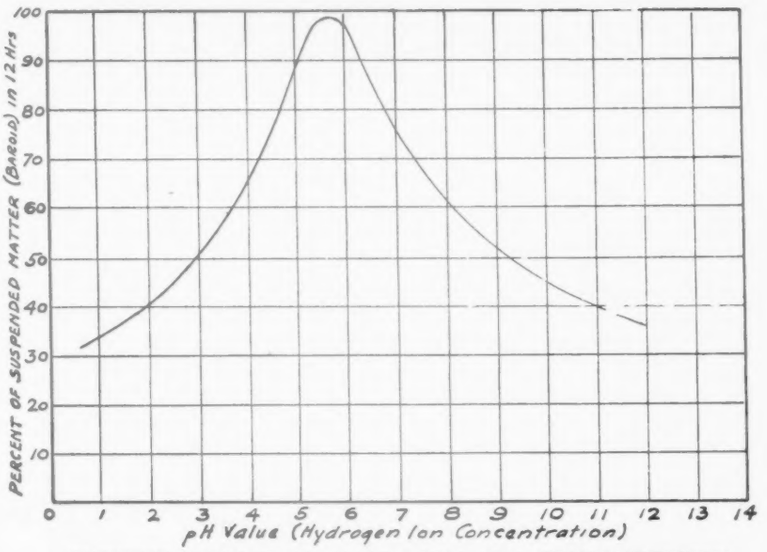
creased viscosity. Figure 2 illustrates this effect on a clay.[3] This effect is due to the presence of soluble metallic salts bordering on a state of true solution in the water content of the drilling fluid, and to the presence of metallic salts in the clay particles. These metallic salts in the mud react through the process of adsorption, with the alkali or alkaline salts added to the mud, forming gelatinous precipitates which actually increase the viscosity of the mud. This is illustrated by the four samples with pH values from 7.1 to 11.9 shown in Figure 2. At the same time as this secondary reaction occurs, there is a deflocculating action which effects the electrolytic condition of the primary colloids but the net result is increased viscosity. The point of this explanation is that the flocculating or deflocculating actions of alkalies on drilling fluids should be interpreted not only on the basis of change in pH values but also on the basis of chemical changes due to adsorption. Figure 2 shows the combined effect of hydrogen ion concentration and adsorption on a certain clay while Figure 5 shows the effect on a more inert substance.[4] The action of some alkalies and silicates (caustic soda, soda ash, sodium silicate, etc.), which are used in similar problems of other industries, produces some immediate results in changing the viscosity of a drilling fluid but their use in an uncombined form should be accompanied by an assurance that the surface film of cohesive matter produced is sufficiently stable to not be easily broken down under agitation while drilling, or by the peptizing action of salt waters picked up in the wells. Gels formed by these uncombined alkalies often are of a type subject to "weeping," i.e., contraction of the gel and liberation of free water.

The special factors in the study of drilling fluid clay suspensions that are not present in similar problems of other industries, and consequently not covered by precedent, are highly concentrated and widely varied crystalloidal content of the dispersive phase, and the severe mechanical demand and chemical contamination imposed on the fluid while drilling.

[3] "El Paso Clay" (from Findlay, Texas).
[4] Baroid.



SHOWING EFFECT OF HYDROGEN ION CONCENTRATION ON THE COLLOIDAL QUALITY OF A BAROID-WATER MIXTURE.
Mixture = 25% BAROID TO WATER, BY WEIGHT

FIG. 3

SHOWING EFFECT OF HYDROGEN ION CONCENTRATION ON THE COLLOIDAL QUALITY OF A BAROID-WATER MIXTURE (25% BAROID TO WATER, By Wt.) AFTER SETTING 1½ HRS.

FIG. 4

Figure 3 graphically shows the effect of hydrogen ion in concentration on the colloidal quality of Baroid in 12 hours after agitation, using 25% Baroid, by weight, mixture with water solution of varying hydrogen ion concentration
Figure 4 graphically shows the same effect as Figure 3 on Baroid in 1½ hours after agitation is stopped

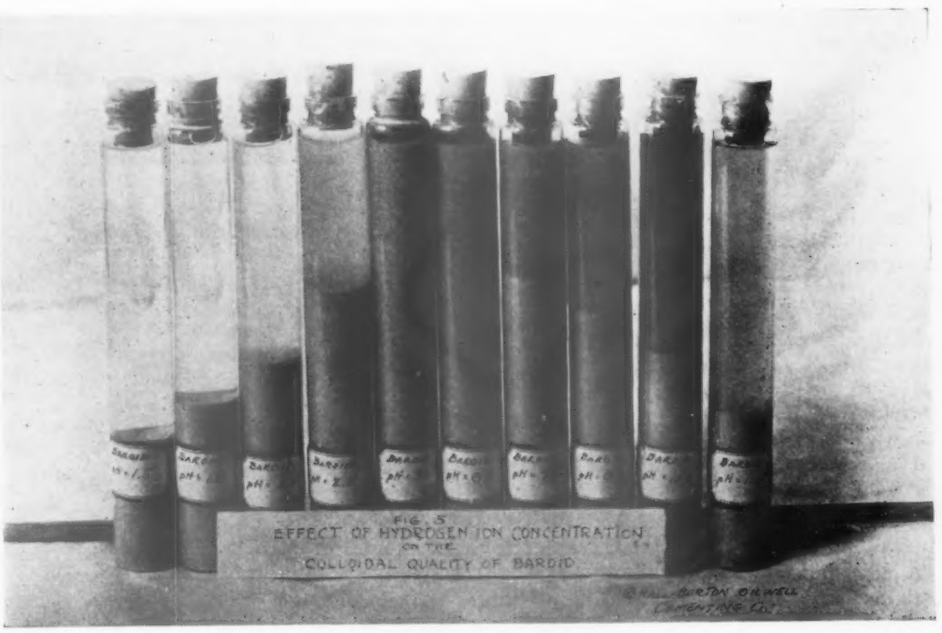


Figure 5 photographically shows the actual effect of hydrogen ion concentration on Baroids.

Centrifugal Separator Removes Sand From Drilling Mud

By BRAD MILLS
Staff Representative

THE use of a new type centrifugal separator to remove sand from rotary drilling mud has greatly facilitated Union Oil Company's field operations at Playa del Rey, where the first installation of its kind is reclaiming mud from four drilling wells at a considerable saving over ordinary methods. Although the company's willingness to accept an improved drilling idea was primarily the basis for the installation, the waste disposal problem figured prominently in the design of the layout, which includes a series of settling basins for skimming oil from the lighter fluid when the rotary mud contains oil. The settling basins should be regarded as incidental to the desanding operations, however, the latter incorporating principles new to the oil industry and offering a central desanding which may be used on one well or for a lease unit plan of operation.

The reclaiming of rotary drilling mud usually means nothing more than the removal of sand and gas from the original mixture. It is obvious that larger foreign matter must be removed along with any oil which may be entrained in the mud, but the removal of sand has been the greatest problem. Ordinary screens have been used for a generation to exclude the coarser matter which has played havoc with pumps and rendered comparatively fresh mud useless on short notice. Thus it follows that the heart of Union Oil Company's Playa del Rey installation is the apparatus for removing sand from the full volume of mud required by the entire lease.

Two mud lines are provided at each drilling well—a No. 1 line and a No. 2 line. The first is a four-inch line which leads to the main line supplying the reclamation plant and the second a six-inch line which brings the mud from the plant to the well. The lease discharge line which eventually handles the drilling mud from all wells empties into a 30-foot by eight-foot, 1000-barrel tank of open top construction.

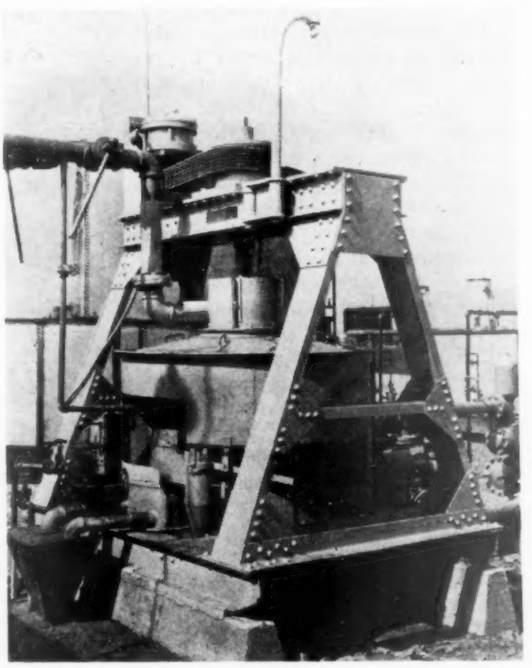
A small quarter mesh vibrating screen has been installed on a level with the top of the receiving tank, original treating of the mud without this precaution having resulted in congestion of the nozzles within the centrifugal separator. The vibrating screen does not remove any of the sand but takes out all coarse particles and helps to break up the mixture. It is operated by a one-half horsepower motor.

The 1000-barrel receiving tank has recently been equipped with four small spraying nozzles which are connected with the mud lines under pressure. A small quantity of mud is sprayed onto the top of the mud in the main receiving tank to break up the emulsion and remove a portion of the gas which naturally works toward the top of the mixture. An adjustable swinging skimmer within the tank removes a good percentage of the free oil and water.

Arrangement of Pump

A centrifugal pump, submerged in the main receiving tank, sends the full flow of mud to the centrifugal separator through a four-inch line. This mud line leaves the receiving tank via the open top and runs along this level to drop down to the top of the separator. Both the vertical lift and the distance from the receiving tank are short, the submerged pump easily handling the full flow.

The centrifugal separator is a compact machine, covering a ground space of six by eight feet and standing less than 10 feet high. It employs centrifugal force to achieve



The Merco centrifugal separator is a compact machine

separation of the sand from the drilling mud. Operating at a speed of 540 r.p.m., Merco separator generates a great settling force through its chief agency—centrifugation. At the average operating speed, the machine subjects the flow of sand and mud to a settling force in the rotor to more than 65 times the force of gravity. The centrifuge accepts a continuous flow of sandy mud at the top, with the clean mud and sand emerging at levels near the base.

The rotating bowl is only 30 inches in diameter. A 10-horsepower motor operates the machine by means of a texrope drive. The operating load is greatly reduced by the fact that the orifices discharging the sandy fluid during the circulation face a backward position. Thus the energy required for circulation does not become a troublesome factor. The operating load at full speed ranges between three and four horsepower.

The rotating mechanism within the separator is suspended on a vertical shaft, with the main bearing above housed between structural steel beams which also form the top bracing. The bottom of the shaft is more or less

confined to a housing which permits an appreciable movement. This allows the whirling mechanism to seek its best position and eliminates rigidity. The rotating bowl has no moving parts. The mud drops into the top of the rotating bowl and is immediately whirled upward by blades in the bottom of the top compartment. The bowl opens only to the top, causing a constant overflow of the mixture. The separation of the sand is immediate, most of the reclaimed mud flowing into the outlet compartment to be picked up by the pumps and sent to storage.

The separated sand is discharged largely through openings or nozzles at the periphery of the bowl. This separated sand drops into a tank of a larger circumference and is recirculated through the outer chamber. The accumulation of sandy fluid in the bottom of the outer tank necessitates further circulation. This circulation is maintained by a pointed chamber, opening to the bottom and equipped with blades. The sandy fluid is forced by centrifugal action to return to the bowl, climbing the walls and entering the bowl through pipes placed at an angle. The sloping design of the bowl causes it to retain a uniform thickness of sand, reducing the pouring action to a minimum.

The sand is discharged with a small quantity of fluid through an outlet near the base of the separator and opposite to the discharge for the reclaimed mud. The upper shell of the separator is largely a chamber for catching the overflow of reclaimed mud.

Small but Capacious

Although a small machine, the separator has an unusual capacity, being able to handle a continuous flow of undiluted drilling mud up to 300 gallons per minute or 10,000 barrels per day. The degree of separation desired determines the amount of feed, the separation ranging from 200 mesh to 100 mesh under average conditions. The condition of the mud, its composition and other factors naturally affect the operation of the separator.

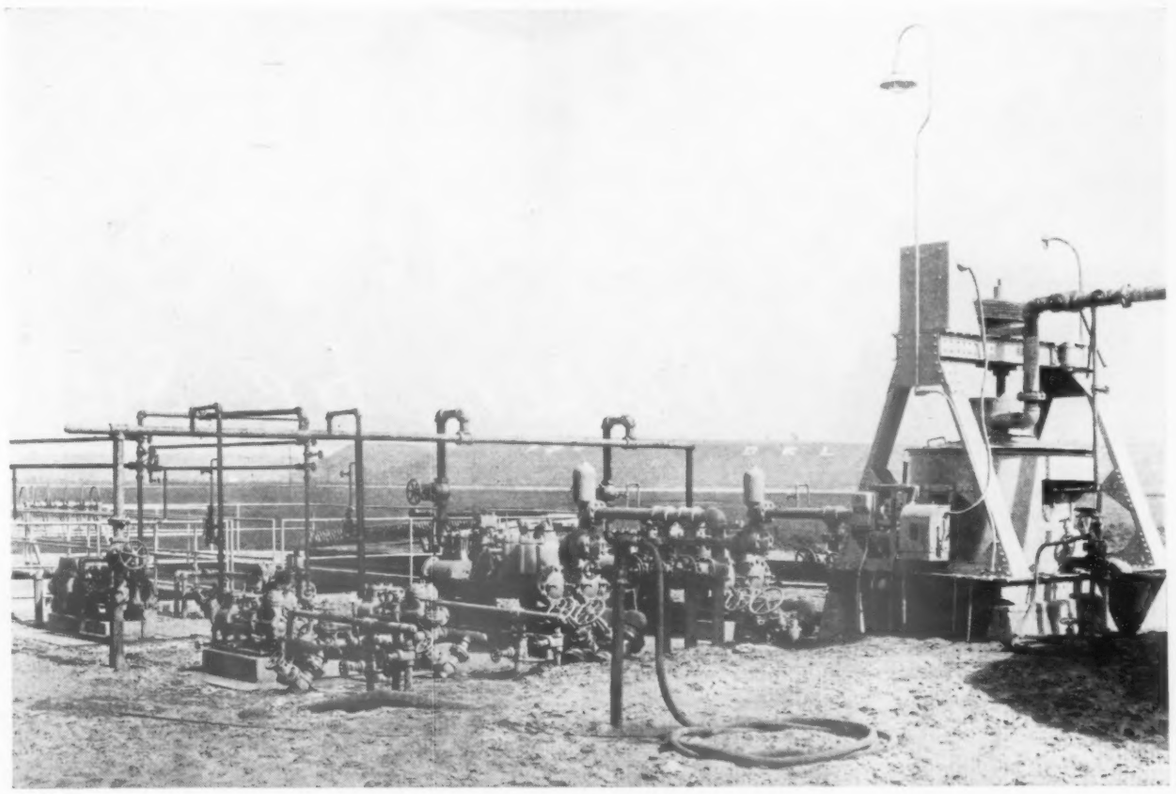
The mud received has contained up to 35 per cent sand, but the average sand content is far lower than this maximum. Special analyses were made of certain runs to determine the degree of separation. During one run the mud treated was a fairly viscous blue clay, weighing 82 pounds and mixed with ocean water. The run included 1200 pounds of mud, which had a sand content of 46 per cent by weight of solids. The feed rate was 175 gallons per minute. The dry composition was:

	Feed	Desanded Mud	Sandy Fluid Discharged
Weight per cubic ft.	91.0 pounds	82.0 pounds	100.2 pounds
+65 mesh	13.0 per cent	0.4 per cent	20.5 per cent
−65 + 100 mesh ..	19.4	1.9	29.6
−100 + 150 mesh .	3.3	1.4	4.6
−150 + 200 mesh .	6.4	1.65	9.2
−200 mesh	3.8	0.82	5.5
Decanted mud	54.0	93.83	30.6

It may be observed from the foregoing that the feed was nearly one-half sand. The solids in the test run were more difficult to separate than those in the average mud received. About 95 per cent of all sand was extracted, 96.5 per cent of the +150 mesh, and 91 per cent of the −150 mesh was extracted.

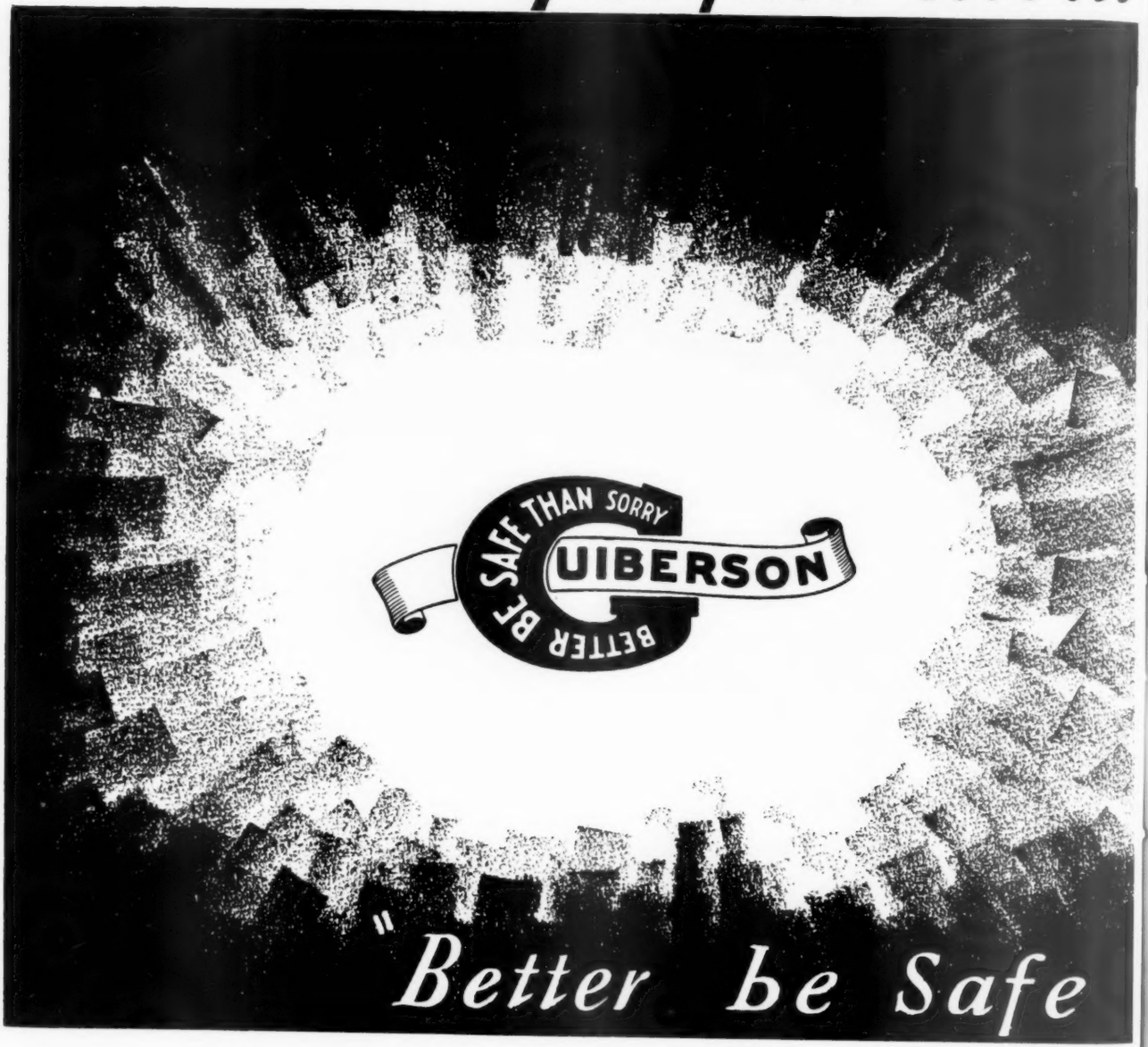
Two 12 by 6¾ by 14 mud pumps are used in connection with the installation. They are connected so that either or both may be used to store or circulate the mud, or for agitation. The reclaimed mud is pumped to a 2000-barrel storage tank and excess water drawn off.

The sand from the separator is sent to the sand dump through a sluice box, the disposal problem being of little moment when compared with that developed by necessity of complete mud changes where the sand is not removed.



Two mud pumps are used in connection with the separator—Union Oil Company's plant at Playa del Rey

WHERE *you find one...*



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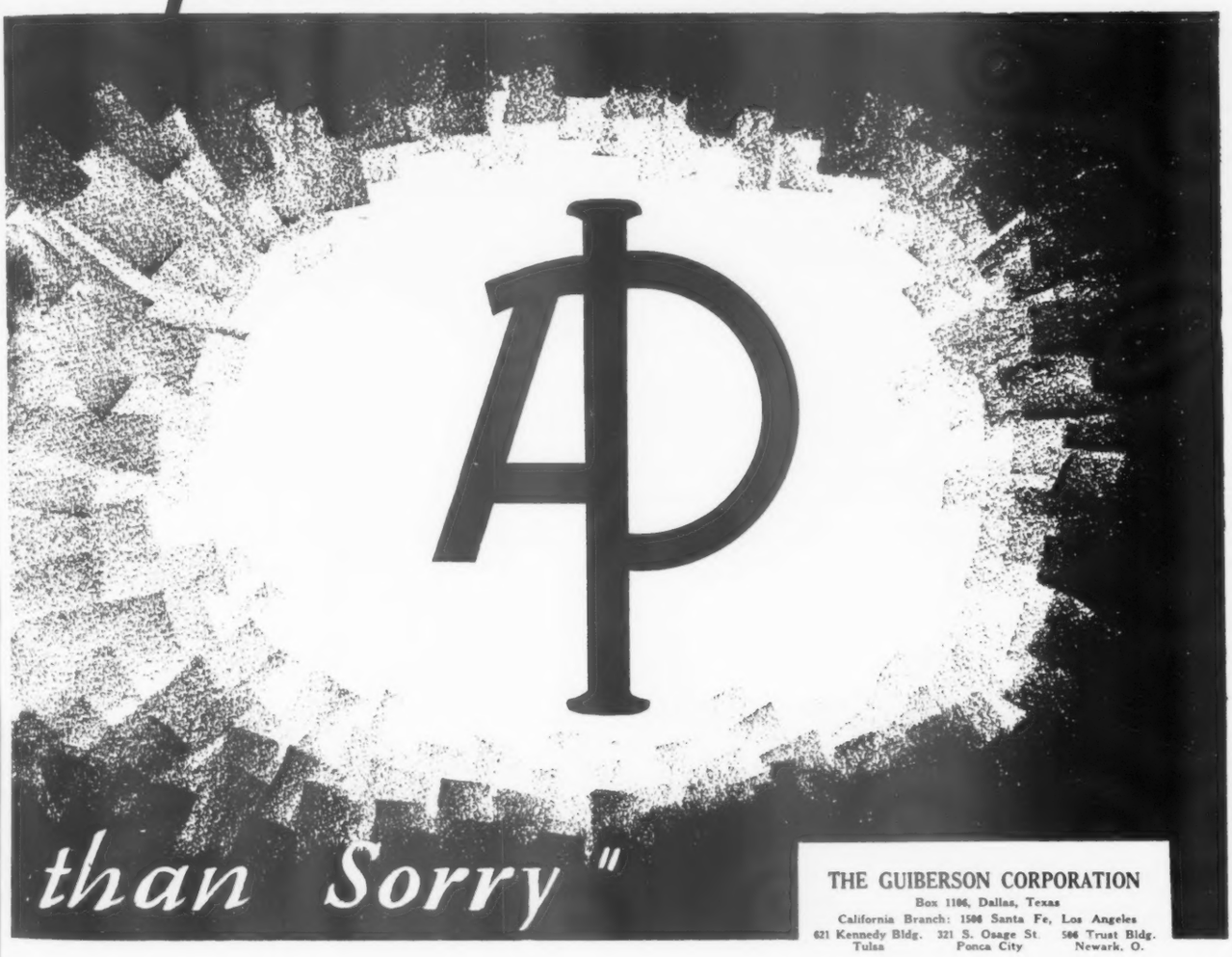
you will always find the other



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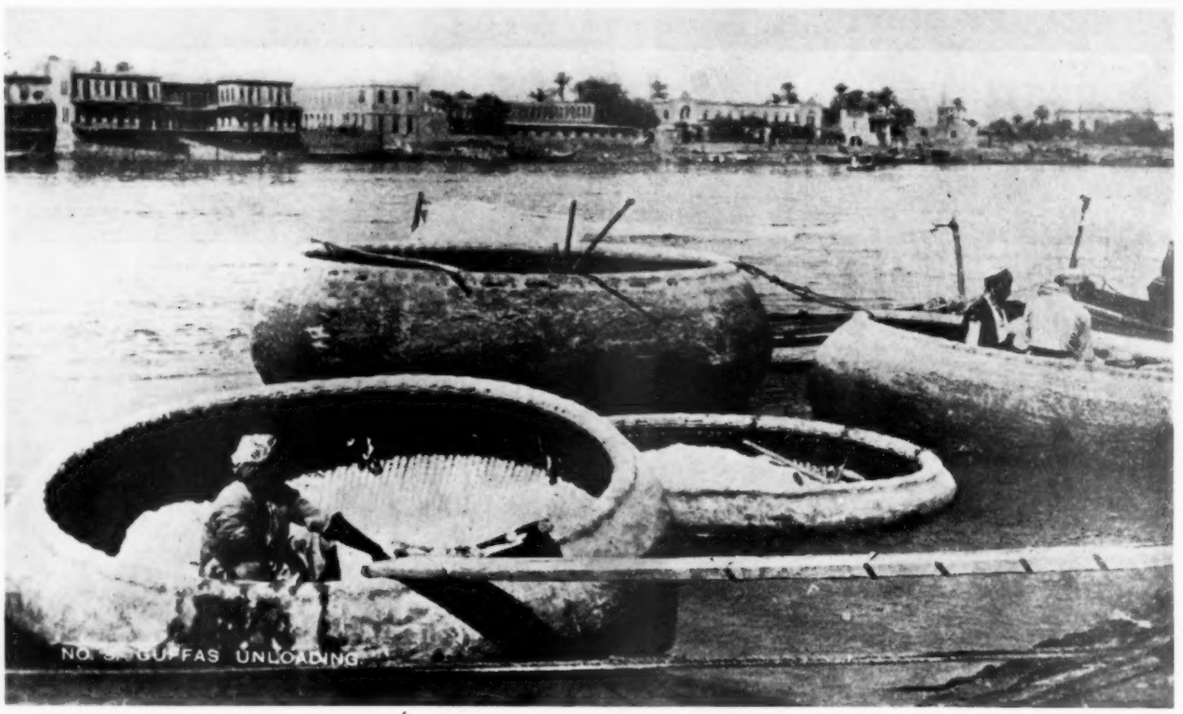


WORLD PETROLEUM IN REVIEW

Government Shake-up Discloses Friendliness Buenos Aires, Argentina.—The recent change in the Argentine govern ent has affected the oil situation materially in that the new government is more friendly toward foreign capital and the work of foreign industrial concerns in Argentina than was the case under the Irigoyen regime.*

However, some change in attitude was noticed even before Irigoyen was replaced in office. A week before his fall he signed the permit of the Royal Dutch Shell for construction of a refinery by a subsidiary, a permit which had been pending and refused for a long period. Work on the refinery is under way and it should be running by early summer in 1931.

Under the new regime the attitude of the government toward permits on work is now friendly. Representatives of foreign countries are now allowed to discuss business matters with the government whereas under the Irigoyen administration, General Mosconi usually refused to discuss such matters. General Mosconi was one of the Irigoyen government heads to fall with the president and he is now in prison.

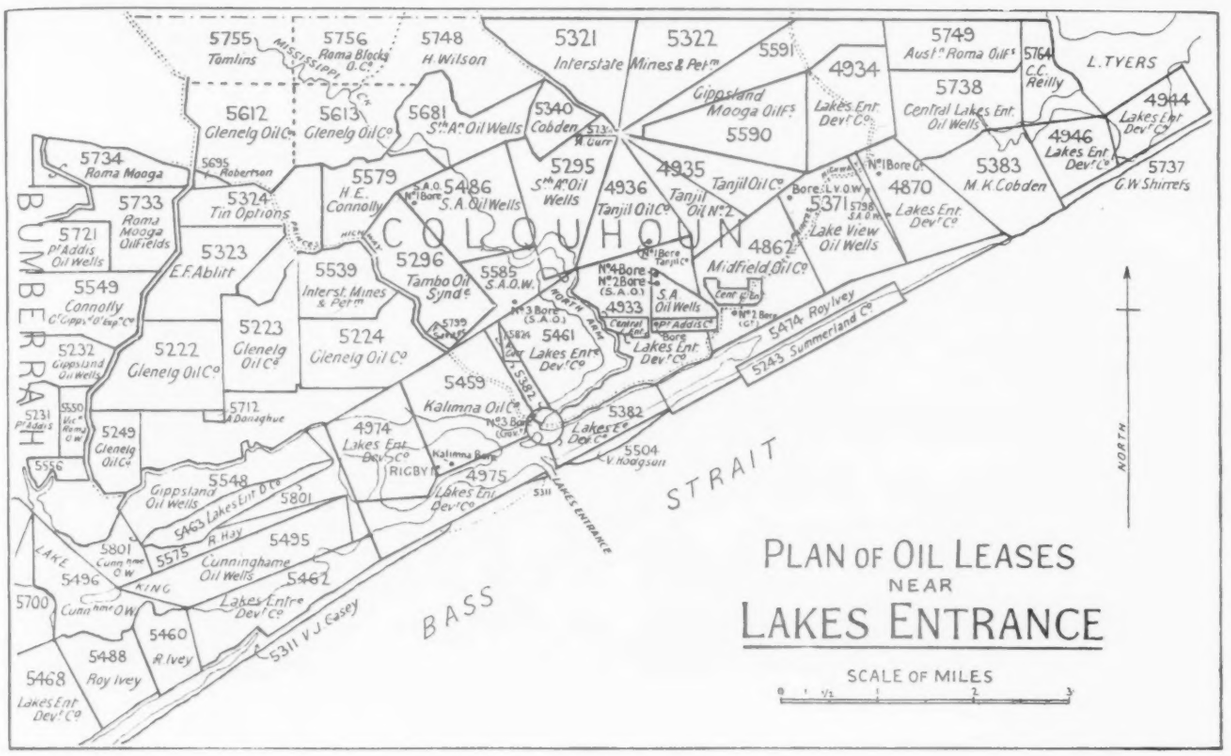
Nine Producers In Nuevo Leon Mexico City, Mexico.—Official statements issued here show that nine producers have been brought in for the State of Nuevo Leon, the largest producer of the group being the one of the petroleum department of the National Railways of Mexico. The well has an initial production of approximately 10,000 barrels daily. The other wells are owned by the Matches Oil Company, an American concern. Activities in the state show the confidence of geologists that the Aldamas district is on the same structure as the fields across the Rio Grande on the American side. Drilling campaigns have been started by Standard Oil Company of New Jersey and Empire Gas & Fuel Company in the Aldamas district.

Standard to Lease Trinidad Area San Fernando, Trinidad.—The Standard Oil Company of New Jersey, through its subsidiary, the Trinidad Oilfields Development Company, Ltd., has made a proposal to lease the oil rights of an area in this country which has never been previously tested for oil. This area extends from the seaboard of the Gulf of Paria, north of the Trinidad leaseholder's Refinery, to the Couva district and extends to the Montserratt Hills. This area is under cultivation and it is from the owners of the plantations that the leases will be secured. Negotiations with the government to lease part of the government oil-bearing lands prompted the move on the part of this company to acquire these leases.

Prospecting Will Begin Soon Berlin, Germany.—Reports of engineers disclose that an active prospecting campaign will be started immediately in the villages adjoining Itzehow, Schleswig-Holstein. This district is not far removed from Hamburg, which is situated between the Heide fields and the Dannhorst fields.

*See The Oil Weekly, October 11, 1929—Page 42, "Nationalization Hits Snag in Argentina."

THE PICTURE. These bowl-shaped boats, called "guffas," have been used on the Tigris since time immemorial. They are made watertight by the use of asphalt—the idea was borrowed from Noah.

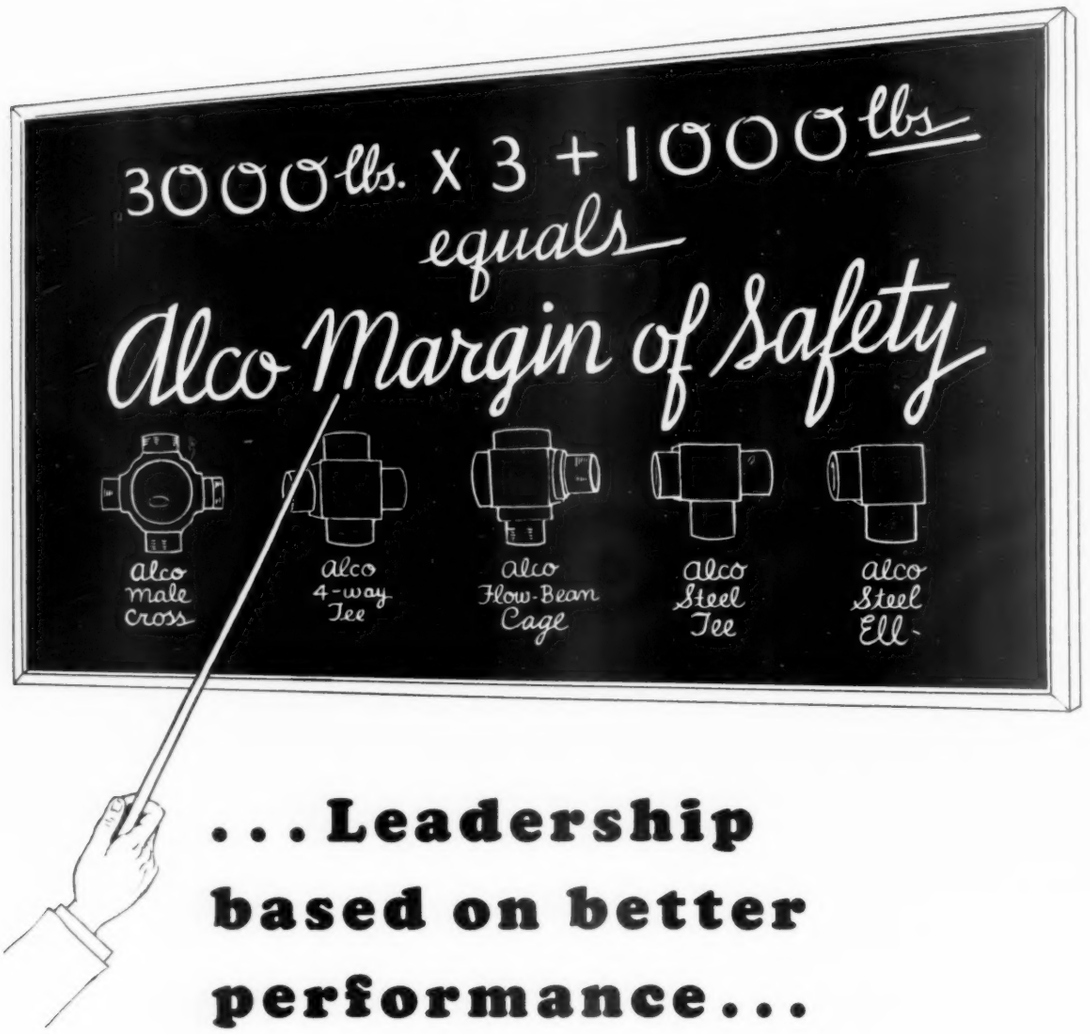


Pipe Line Company Organized Paris, France. — Announcement has been made recently of the formation of a pipe line company organized jointly by the Societe d'Enterprises de Canalisation of Paris and the Leitungsbau of Berlin, a subsidiary of the Ruhr Gas Company. This marks a new step in Franco-German trade co-operation. The new enterprise will operate in all countries apart from Germany and France, and it is expected that it will be in a position to secure important contracts for the supply of oil, gas and water pipe lines in Eastern Europe and the Balkans.

A good man in a pinch—Roy E. Leigh, special foreign representative of THE OIL WEEKLY, *soon after he entered Asia on his trip around the world. The cops are the type that protect oil company properties in Iraq*

Australian Prospect Covers Large Area Lake Entrance Melbourne, Australia.—The accompanying map is of the Lake Entrance township, where oil was recently found. The area of the sedimentary beds, according to a report in The Oil Bulletin, official organ of the Victorian Oil Producers Association, is quite extensive, running west at least as far as Sale and east to Orbost. This gives a length in excess of 100 miles and a breadth of 20 miles. Lake Entrance surface indications as to the existence of oil, are not marked, and no oil seepages have been noted. The structural geology shows some slight evidence of folding, but the outcroppings of rock are few, and where they occur show only slight inclination with insufficient surface data from which to define the nature of the folding of the tertiary strata. However, there have been indications of oil and gas in every test that has been drilled in this field, the position of these tests showing that oil occurs over an area of nine square miles. Present tests include wells Numbers 3 and 4 by South Australian Oil Properties, whose locations were determined by data obtained from previous drilling.

Begin Construction Of Refineries Paris, France.—Large refineries will soon be installed at Gonfreville-l'Orcher, on the Tancarville canal banks and in the lower Seine valley near Port-Jerome. The Compagnie Industrielle Maritime, which holds an important concession at the mouth of the harbor, has solicited an extension of this concession in order to construct three new basins in which six large tankers may be placed at the same time so the plants may be supplied with raw materials. Agreements with refining companies will insure imports of hydrocarbons to the amount of 9,500,000 barrels annually.



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Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Production Resumes Downward Trend; Market Feeble

THE downward trend of crude oil production was resumed last week when the national daily average declined approximately 24,100 barrels, bringing the total down to 2,354,100 barrels daily. Following the price reductions announced in last week's issue of THE OIL WEEKLY, came another barrage of advices to the effect that crude prices were reduced in practically all fields of the United States, east of California. Most important among the changes announced by the major purchasing companies was a rather general agreement to eliminate postings on crude above 40 gravity; the price for this gravity being accepted as the top price for all gravities to and including 44 and above. As matters stand now, there is considerable confusion concerning crude price schedules since there are numerous instances where prices vary on gravity scales adopted by the major purchasing companies. Further, the announcement made by the Gulf Pipe Line Company to the effect that all grades of Gulf Coast crude had been reduced to about 20 cents below the schedule recently adopted by Humble Oil & Refining Company, has somewhat confused the price situation in the Gulf Coast area.

Analysis of the crude situation at this time shows that the daily average production of the United States is about 17,676 barrels below the combined allowable figure. Arkansas, Oklahoma and the Rocky Mountain and Eastern States are now producing somewhat less oil than the daily allowable figures set up for those areas. A further reduction of 10,000 barrels in the allowable output of the Texas Panhandle district has necessitated a revision in the Texas total allowable figure, bringing it down to 665,000 barrels daily. Using this new figure, it is seen that the total production credited to Texas last week is excessive to the extent of 15,250 barrels. It is expected, however, that the new allowable figure for the Texas Panhandle will perhaps be realized almost immediately, and the production figures for succeeding weeks will undoubtedly be reduced to a point below the present allowable of 665,000 barrels. Since practically all flush areas outside of Texas have succeeded in bringing production down to a normal level, and with Texas slated to contribute further to the national production curtailment program, there is every reason to believe that the downward trend of crude production will be continued throughout the balance of this year.

Oklahoma and Texas Declines Cause Production Loss

OKLAHOMA, Kansas, Texas, outside of Gulf Coast, Gulf Coast, Eastern States and Rocky Mountain States contributed to last week's resumption of declining production. Oklahoma production was down 12,950 barrels and Texas, outside of Gulf Coast reported a decline of 6450 barrels daily. Estimates indicate that the Rocky Mountain area also showed a decline of 5600 barrels. Official American Petroleum Institute figures for this area and the Eastern States were not available at press time. North Louisiana, Arkansas and California reported gains in production. California production was increased because of a gain in output at Playa del Rey, where the gain amounted to 6000 barrels daily.

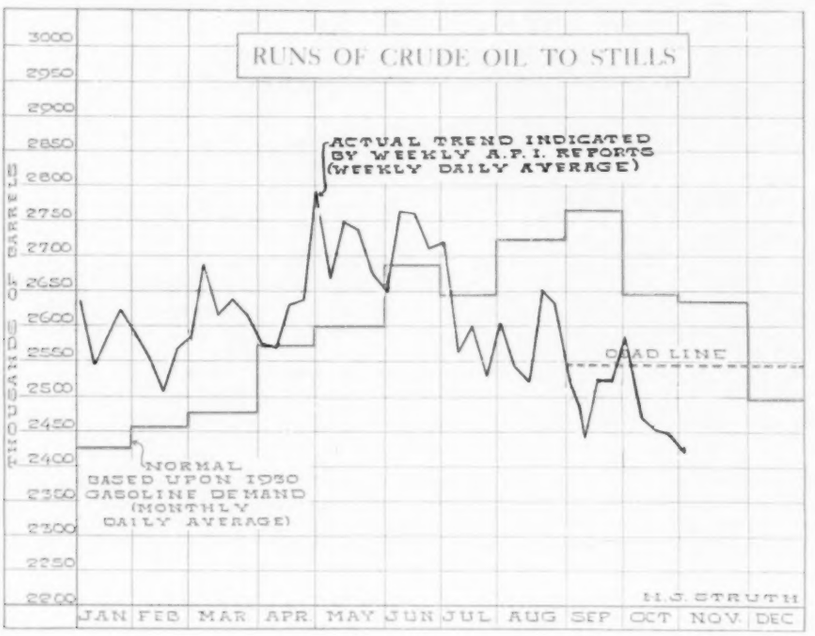
Following are the more important production changes indicated from figures received from the American Petroleum Institute for the week ending November 1.

		Barrels
Ector County	Increase	1,300
Yates	Increase	2,850
Chapman	Decrease	1,900
Darst Creek	Decrease	12,250
Refugio	Decrease	1,850
Carr City	Increase	1,050
Earlsboro	Decrease	3,000
Oklahoma City	Decrease	4,100
West Asher	Decrease	1,050
Voshell	Decrease	1,350
Elwood	Decrease	2,300
Long Beach	Increase	2,250
Playa del Rey	Increase	6,000
Ventura	Decrease	1,200
"Other" California	Decrease	3,500

September Stock Report Shows 5,000,000 Barrel Decline

THE Bureau of Mines report for September shows that total crude stocks east of California on September 30 amounted to 376,975,000 barrels, a decline of nearly 5,000,000 barrels from the previous month. Stocks of both light and heavy crudes in California showed a small decline during the month. The continued curtailment of crude production and the indicate increase in gasoline consumption in September were reflected in total stocks of all oils. These stocks on September 30 amounted to 678,508,000 barrels, a reduction of 7,349,000 barrels during that month. A year ago total stocks of all oils increased 5,498,000 barrels during September. While these figures show vast improvement in the statistical position of the industry at this time, it is apparent that further effort will be required on the part of refiners to reduce excessive stored supplies of gasoline. According to the Bureau of Mines, stocks of gasoline on October 1 amounted to 38,254,000 barrels, compared with 33,181,000 barrels on the same date last year. As long as refinery still runs of crude are maintained at their present level, there is every reason to believe that further material improvement will be effected in the gasoline stock situation. In fact, it is not difficult to foresee better times ahead, provided that stocks of gasoline are brought down to their normal level within the next 30 days; and this is possible if runs are maintained at or below present levels.

MARKET SECTION



California Market Weak Despite Heavy Gasoline Consumption

GASOLINE consumption in California ran considerably ahead of estimates made during the third quarter, the actual figures for the period showing a gain of nearly seven per cent over the corresponding period of last year. Despite this substantial gain in gasoline sales, crude stocks were not reduced in accordance with the jump. Cracking of intermediate grades of crude as well as fuel oil has given a greater recovery of gasoline from a smaller quantity of crude.

The crude market is slightly weaker with the heavier grades in the remote fields moving on a reduced scale. Little has been said publicly concerning the need for a lower production in California but conservation leaders are of the opinion that the state output must be further reduced during next year. Stocks are high and even the major companies are carrying some semi-distressed crude.

Playa del Rey is a troublesome factor and withdrawal of a major company as a purchaser above a certain limited amount was an important development. Kettleman Hills stands as a threat but will be held under some kind of control. Santa Fe Springs is definitely out of the picture

CRUDE RUNS TO STILLS, GASOLINE AND GAS AND FUEL OIL STOCKS, WEEK ENDING OCTOBER 25, 1930

(Figures in barrels of 42 gallons)

District—	Potential Daily Capacity	Potential Capacity Reporting Total	Potential Capacity Reporting Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per Cent Operated	Gasoline Stocks	Gas & Fuel Oil Stocks
East Coast	612,700	612,700	100.0	3,322,000	474,600	77.5	5,702,000	11,937,000
Appalachian	141,300	131,700	93.2	530,000	75,700	57.5	829,000	1,018,000
Indiana, Illinois, Kentucky	390,800	381,000	97.5	1,807,000	258,100	67.7	4,916,000	4,141,000
Oklahoma, Kansas, Missouri	461,100	412,200	89.4	1,787,000	255,300	61.9	2,434,000	4,691,000
Texas	809,000	743,500	91.9	3,675,000	525,000	70.6	6,196,000	10,479,000
Louisiana-Arkansas	266,600	262,000	98.3	1,161,000	165,900	63.3	1,010,000	2,206,000
Rocky Mountain	150,100	139,700	93.1	353,000	50,400	36.1	1,648,000	1,081,000
California	898,500	883,600	98.3	3,762,000	537,400	60.8	13,920,000	103,914,000
Total Week October 25	3,730,100	3,566,400	95.6	16,397,000	2,342,400	65.7	36,655,000	139,467,000
Total Week October 18	3,730,100	3,566,400	95.6	16,523,000	2,360,400	66.2	36,276,000	140,035,000
The Total U. S. Figures for Last Year, Shown Immediately Below, are not Comparable with This Week's Totals because of Difference in Percentage Capacity Reporting								
Total October 26, 1929	3,491,200	3,330,600	95.4	19,563,000	2,794,800	83.9	32,802,000	*145,762,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included above in the Totals of Their Respective Districts.								
Texas Gulf Coast	529,500	529,500	100.0	2,726,000	389,400	73.5	4,992,000	7,654,000
Louisiana Gulf Coast	147,500	147,500	100.0	750,000	107,100	72.6	772,000	1,310,000

*Final Revised.

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

	Necessary Daily Average 4th Quarter 1930	Quota Limit Prescribed to Correct Previous Excesses	Actual Daily Average Week Ending November 1, 1930	Excess
Arkansas	59,518	59,518	53,050	—6,468
California	654,034	594,000	595,600	1,600
Kansas	115,407	105,554	114,350	8,796
Louisiana	57,704	57,704	70,850	13,146
Oklahoma	653,252	550,000	524,500	—25,500
Texas	767,167	765,000*	780,250	15,250
Balance of U. S.	230,000	230,000	215,500	—14,500
Total	2,537,082	2,371,776	2,354,100	—17,676

* New limit account reduction of 10,000 barrels in Panhandle district ordered by railroad commission.

but Long Beach is going almost as strong as a year ago. The field has been extended slightly to the north and the potential is declining very slowly.

An open break was threatened in the gasoline market but serious trouble here has been averted for the present time at least. Fuel oil is heavy for this season with prices ranging from 50 cents to 70 cents in the Los Angeles district.

Oklahoma Market Improved

CONSIDERABLE buying out of southern Oklahoma and northern Texas during the past week seems to have cleaned up the cheap market and the general situation is improved. Gasoline movement has been fairly good and a large number of buyers were taking small quantities and demanding immediate delivery. At the present time U. S. motor grade is low at .04½ with major refiners quoting around .05¼ to .05½. 400, 390 and 375 end point gasolines were being quoted low at .04¾, .05¼, and .05½, respectively and ranging upward.

North Texas Gasoline Market Follows Crude Prices Down

GASOLINE was the only refined oil commodity affected in price to any appreciable extent as result of the wave of crude price cuts made in the Mid-Continent during the last two weeks in October. Current quotations on miscellaneous refined oils and burning oils are about on a par with those that prevailed in the Mid-Continent prior to the breakdown of crude prices. Refiners had allowed for the reduction in raw material costs some weeks previous and for this reason gasoline only slipped from one-quarter to a half cent per gallon. United States motor gasoline is quoted from five to 4½ cents per gallon, according to the storage and financial condition of the plant owner.

A slight gain in gasoline trading by domestic jobbers has had a stabilizing influence in the market during the past week. The general run of fuel oil is netting Mid-Continent refiners about 50 cents per barrel, while West Texas plant owners are receiving 10 to 15 cents under this figure.

North Texas refiners are now assured an adequate supply of local crude at distress prices for some months hence, as major purchasers renewed their restricted crude buying program druing the past week. The majority of the refiners have crude contracts to buy oil beyond December at a fixed sum below posted prices through tieing in with producers that are unable to get market relief elsewhere.

Prairie Oil and Gas Company has placed Montague and

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS
(Barrels of 42 gallons)

	Week ended October 25	Week ended October 18
ATLANTIC COAST PORTS—		
Baltimore	142,000	310,000
Boston	110,000	55,000
New York	1,173,000	825,000
Philadelphia	117,000	278,000
Others	171,000	369,000
Total	1,713,000	1,837,000
Daily Average	244,714	262,429
AT GULF COAST PORTS—		
Galveston District	63,000	.....
New Orleans & Baton Rouge	.....	84,000
Port Arthur & Sabine District	.....	.....
Tampa	39,000	.....
Total	102,000	84,000
Daily Average	14,571	12,000
AT ALL UNITED STATES PORTS—		
Total	1,815,000	1,921,000
Daily Average	259,285	274,429
Daily Average Four Weeks Ended	252,929	268,000
Distribution of Total Imports is as Follows:		
Crude	885,000	1,290,000
Gasoline	434,000	315,000
Fuel Oil	496,000	316,000
Total	1,815,000	1,921,000

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS
(Barrels of 42 gallons)

	Week Ended October 25	Week Ended October 18
AT ATLANTIC COAST PORTS—		
Baltimore	.....	78,000
Boston	95,000	.....
New York	277,000	155,000
Philadelphia	116,000	231,000
Others	.....	55,000
Total	488,000	519,000
Daily Average	69,714	74,143
AT GULF COAST PORTS—		
Total	72,000	23,000
Daily Average	10,286	3,285
AT ATLANTIC AND GULF COAST PORTS—		
Total	560,000	542,000
Daily Average	80,000	77,428
Daily Average Four Weeks Ended	62,714	64,679
Distribution of Total California Oil Receipts is as follows:		
Gasoline	378,000	542,000
Gas Oil	102,000	.....
Fuel Oil	80,000	.....
Total	560,000	542,000

MARKET SECTION

Jack Counties on the marginal quota, and such a policy is causing other majors to do likewise.

Humble Oil and Refining Company is withdrawing almost entirely as a crude buyer in Wilbarger County forcing Stanolind Crude Oil Purchasing Company to take over the former's outside connections in return for crude handled elsewhere for other subsidiaries of Standard Oil Company, (Indiana).

Efforts to lighten the burden of excessive proration restrictions now borne by some operators in North Texas proved a failure after two days' session in Dallas last week between officials of the North Texas Oil and Gas Association and representatives of major pipe line and purchasing companies. The latter group were agreeable to the announced plan, with some exceptions, but the proposition was blocked by a small number of independents that would have been adversely affected, according to Barney Flynn, president of the association.

North Texas Refiners Lay Plans For Gasoline Line to Gulf Coast

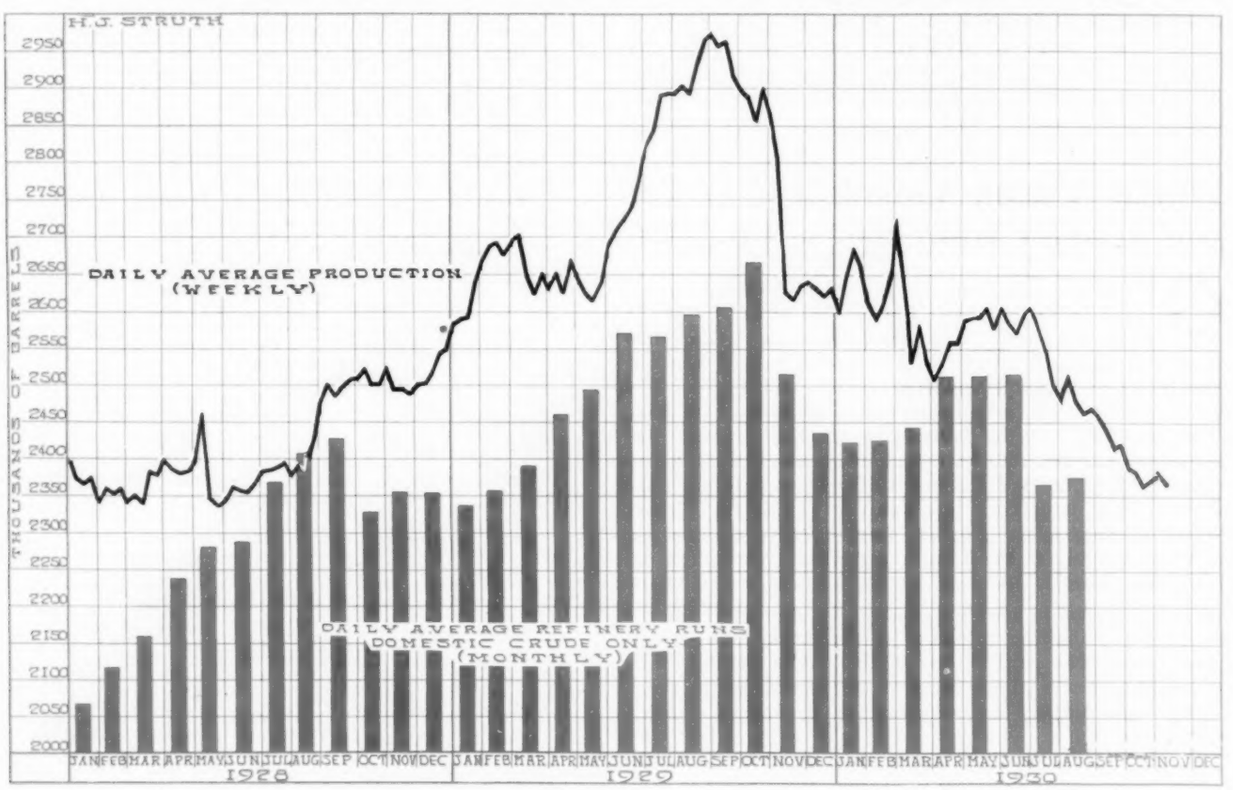
WICHITA FALLS, Texas.—Preliminary negotiations have been launched with independent refiners in the North Texas district by representatives of Moody-Seagraves interests of Houston and New York for the construction of a gasoline pipe line from Wichita Falls to the Gulf Coast. Such a line would be used primarily to transport export specification gasoline direct to tanker terminals, and by reason of cheaper transportation rates would enable North Texas refiners to compete more evenly with plants that enjoy more advantageous rates.

North Texas refiners are credited with having booked export orders during 1930 that result in approximately 75,000,000 gallons of 375 and 390 end point gasoline moving to various coastal terminals through tank cars for the 12-month period. This class of business has been slipping away from the plant owners in recent years, as 150,000,000 gallons annually has been booked by these plants in former years. North Texas refiners are paying an export rate of .0135 cents per gallon on tank car shipments of gasoline to common points on the Gulf Coast.

A direct trunk line to the coast would require approximately 300 miles of pipe, and it is believed that a six-inch carrier would be sufficient to supply the needed transportation. Such a line would also serve the plants in making gasoline deliveries to intermediate points.

Decreased export business and construction of gasoline lines from leading refining centers in Oklahoma and Kansas to middle western and northern points has circumscribed the available gallonage for North Texas refiners. The latter are confronted with the necessity of reducing their operations, or providing cheaper transportation in reaching distant markets. The pipe line project has met with favor among a number of the plant owners, and negotiations are under way as to the possibilities of floating a bond issue to finance the project, with participating plants sharing in the finances.

DOMESTIC PRODUCTION AND REFINERY RUNS



MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisian a	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
January	671,050	111,700	672,650	178,300	37,650	58,500	142,250	73,850	688,850	2,634,800	81,574,650
February	631,900	111,400	654,600	199,950	39,450	58,400	135,050	74,850	746,550	2,652,150	74,280,200
March	622,650	115,500	644,400	206,000	41,600	58,600	132,700	73,600	649,000	2,544,050	78,865,400
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,700	2,576,250	77,018,100
May	663,300	131,000	662,350	203,960	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
Sept.	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
*October	544,600	115,150	610,700	195,000	41,300	52,750	121,900	103,300	590,350	2,375,050	73,627,350
October 25	537,450	115,750	621,500	193,800	41,850	52,750	122,400	99,550	593,150	2,378,200	16,647,400
November 1	524,500	114,350	615,050	193,150	42,900	53,050	121,550	93,950	595,600	2,354,100	16,478,700
Increase	.....	.....	.....	.....	1,050	300	.....	.....	2,450	.....	.....
Decrease	12,950	1,400	6,450	650	....	.....	850	5,600	.....	24,100	168,700

*Preliminary—Subject to revision.

TEXAS
(Outside Gulf Coast)

PANHANDLE DISTRICT

	Nov. 1	Oct. 25
Carson County	7,300	7,300
Gray County	55,850	55,800
Hutchinson County	16,900	17,000
Wheeler County	450	500
Others	650	600
Total	81,150	81,200

NORTH TEXAS

Archer County	13.550	13,300
Burkburnett	7,850	7,800
Electra	10,400	10,300
Iowa Park-KMA	4,600	4,550
Montague and Cooke Counties	9,300	9,200
Wilbarger	15,500	15,500
Others	1,900	1,900
Total	63,100	62,550

WEST CENTRAL TEXAS

Brown County	5,400	5,400
Callahan County	3,000	3,000
Coleman County	2,600	2,600
Eastland-Desdemona	5,300	5,300
Jack County	2,250	2,050
Palo Pinto County	500	500
Shackelford County	5,650	5,650
Stephens County	5,300	5,300
Throckmorton County	700	700
Young County	14,700	14,500
Others	2,000	2,000
Total	47,400	47,000

WEST TEXAS

Crane-Upton Counties	35,500	34,900
Crockett County	2,100	2,000
Ector	8,350	7,050
Howard County	31,600	31,350
Jones County	1,300	1,300
Mitchell-Scurry Counties	2,200	2,100
Pecos County	3,000	3,000
Reagan County	26,200	25,800
Winkler County	60,300	59,400
Yates	106,100	103,250
Others	6,900	7,200
Total	283,550	277,350

EAST CENTRAL TEXAS

Boggy Creek	2,600	2,400
Corsicana-Powell	5,350	5,300
Currie	300	300
Mexia	4,050	4,100
Nigger Creek	200	200
Richland	200	200
Van Zandt	28,100	27,600
Wortham	700	700
Total	41,500	40,800

SOUTHWEST TEXAS

Chapman-Abbott	7,850	9,750
Dale	300	250
Darst Creek	47,500	59,750
Laredo District	13,550	13,650
Luling	10,000	9,900
Lytton Springs	800	800
Salt Flat	16,300	16,350
Somerset	1,550	1,600
Others	500	550
Total	98,350	112,600
T'tl Tex. (outside Gulf Coast)	615,050	621,500

TEXAS GULF COAST

Barbers Hill	20,250	21,000
Batson	1,150	1,150
Big Creek	3,700	3,850
Blue Ridge	1,650	1,700
Boling	950	1,000
Damond Mound	700	700
Esperson	2,900	2,950
Fannett	650	650
Goose Creek	4,400	4,500
Hankamar	1,650	1,500
Hull	7,600	7,800
Humble	18,500	18,550
North Dayton	1,900	1,100
Orange	2,200	2,100
Orchard	2,150	1,700
Pettus	7,500	7,100
Pierce Junction	10,500	10,700
Port Neches	1,450	1,400
Raccoon Bend	8,900	9,100
Refugio	24,050	25,900
Saratoga	1,200	1,200
Somerville	2,300	2,250
Sour Lake	2,200	2,200
South Liberty	3,100	3,100
Spindle Top	14,750	15,350
Sugar Land	12,300	11,900
West Columbia	4,300	4,400
Others	2,300	2,550
Total	165,200	167,400
Texas Total	780,250	788,900

OKLAHOMA

Allen	13,550	13,800
Asher	1,050	1,100
Blackwell	3,100	3,100
Bowlegs	13,700	14,200
Braman	3,100	3,100
Bristow Slick	14,100	14,150
Burbank	14,850	15,000
Carr City	10,050	9,000
Cromwell	7,000	7,000
Cushing	13,350	13,400
Davenport	1,050	1,050
Duncan District	8,600	8,650
Earlsboro	18,400	21,400
East Earlsboro	18,600	17,800
East Little River	11,900	11,750
East Seminole	2,150	2,100
Fox	1,200	1,200
Garber	4,650	4,700
Graham	3,200	3,200
Healdton	11,950	12,000
Hewitt	6,600	7,000
Hubbard	1,300	1,300
Konowa	17,600	17,600
Little River	23,800	24,200
Logan County	4,700	4,700
Maud	3,100	3,650
Mission	7,150	7,250
North Okmulgee	10,100	10,250
Oklahoma City	84,800	88,900
Osage (outside Burbank)	24,400	24,500
Papoose	2,550	2,600
Pearson	700	700
St. Louis	21,800	22,850
Sasakwa	5,250	4,850
Scholem Alechem	13,900	14,000
Searight	6,600	6,800
Seminole	13,600	14,000
South Earlsboro	8,500	9,350
South Okmulgee	6,750	6,750
Thomas	650	650
Tonkawa	6,100	6,150
West Asher	8,000	8,700
Wewoka	5,500	5,000
Yale Jennings	6,900	6,900
Others	58,600	61,100
Total	524,500	537,450

KANSAS

Augusta-Fox Bush	2,900	2,900
Churchill	3,500	3,450
Eldorado-Towanda	13,950	14,000
Florence-Covert	800	800
Greenwood County	19,050	19,000
Oxford	2,500	2,500
Peabody-Ebling	2,350	2,400
Rainbow Bend	1,050	1,050
Russell	3,050	3,050
Sedgwick	22,900	22,750
Voshell	8,000	9,350
Others	34,300	34,500
Total	114,350	115,750

CALIFORNIA*

Dominguez	10,000	10,000
Elwood-Goleta	37,500	39,800
Huntington Beach	28,000	28,000
Inglewood	15,300	15,500
Kettleman Hills	25,500	24,800
Long Beach	98,500	96,250
Midway-Sunset	59,000	59,000
Playa Del Rey	32,000	26,000
Santa Fe Springs	94,000	93,800
Seal Beach	19,000	18,500
Ventura Avenue	45,300	46,500
Others	131,500	135,000
Total	595,600	593,150

*California production figures for week ending November 1, obtained from Pacific Coast office of A. P. I.

NORTH LOUISIANA

	Nov. 1	Oct. 25
Caddo Heavy	2,750	2,750
Caddo Light	8,300	8,350
Cartersville	2,800	2,700
Cotton Valley	1,850	1,900
DeSoto-Red River	2,950	2,950
Haynesville	5,150	5,100
Holly	1,000	850
Homer	3,400	3,400
Urania	5,450	5,400
Zwolle	7,550	6,750
Others	1,700	1,700
Total North Louisiana	42,900	41,850

LOUISIANA GULF COAST

Bayou Boullion	200	300
East Hackberry	2,000	2,100
Edgerly	500	500
Evangeline	2,000	1,950
Hackberry	950	900
Lake Barre	2,500	1,800
Lockport	3,600	3,500
Port Barre	2,800	2,900
Sorrento	50	50
Sulphur Dome	3,250	4,000
Sweetlake	1,150	1,150
Vinton	5,900	4,850
White Castle	1,050	1,100
Others	2,000	1,300
Total Louisiana Gulf Coast	27,950	26,400
Louisiana Total	70,850	68,250

ARKANSAS

Champagnolle	3,700	3,550
El Dorado	4,050	4,100
Lisbon	850	850
Nevada	1,000	1,000
Smackover Heavy	36,350	36,350
Smackover Light	4,950	4,950
Stephens	900	900
Others	1,250	1,050
Total	53,050	52,750

MOUNTAIN STATES

WYOMING

Big Muddy	1,900	2,050
Elk Basin	700	800
Grass Creek	1,800	2,050
La Barge	1,900	2,100
Lance Creek	100	100
Lost Soldier	4,900	5,600
Oregon Basin	1,700	1,800
Rock River	2,000	2,100
Salt Creek	28,000	28,600
Others	3,950	4,150
*Total	46,800	49,350

MONTANA

Cat Creek	1,050	1,100
Pondera	1,700	1,700
Sunburst	5,000	5,050
Others	100	100
*Total	7,850	7,950

COLORADO

Florence	550	450
Fort Collins	1,150	1,150
Moffats (Craig)	1,100	1,100
Others	1,500	1,500
*Total	4,300	4,200

NEW MEXICO

Artesia	600	600
Balance Lea County	7,150	8,150
Hobbs High	25,300	27,350
Hogback	450	450
Rattlesnake	1,250	1,250
Table Mesa	100	100
Eddy	150	150
*Totals	35,000	38,050
*Total Mountain States	93,950	99,050

EASTERN STATES

*(Including Ill., Ind., Ohio, W. Va., Pa., Ky., N. Y.)	114,200	115,000
*Michigan	7,350	7,400
*Total Eastern States	121,550	122,400

*Totals for Rocky Mountain and Eastern States estimated by THE OIL WEEKLY. A. P. I. figures not available at press time.

PRODUCTION SUMMARY

East of Rockies	1,665,250	1,685,500
Total U. S.	2,354,100	2,378,200

MARKET SECTION

Weekly Comparisons of Permits Granted for New Wells

	Week Ending November 1	Previous week	This week 1929	Total this month	This month 1929	Total this year	Total this date last year	1929 year total
Arkansas	1	4	..	11	..	92	145	159
California	27	14	24	122	24	788	1,102	1,231
Louisiana	11	26	16	81	16	854	777	903
Kansas	8	12	28	80	28	852	963	1,079
Oklahoma	45	50	83	218	83	2,555	3,020	3,578
Texas	88	137	213	492	213	6,382	7,467	8,697
Total	180	243	364	1,004	364	11,523	13,474	15,647

Two Gas Lines Planned As Market Outlets for Big Lake Field

Fort Worth, Texas.—Two natural gas lines extending in an east and west direction from the Big Lake field will be constructed as soon as materials can be delivered on the ground as result of Big Lake Oil Company and Group One Oil Corporation (Continental Oil Company) having contracted on November 3, to sell residue gas from their gasoline plants for a period of 10 years to Tri-Utilities Corporation the latter concern recently acquired the San Angelo Natural Gas system of Oklahoma Natural Gas Corporation through allied interests.

The largest line will consist of about 70 miles of 12-inch welded pipe extending from the Big Lake field to San Angelo where it is expected that about 15,000,000 cubic feet of gas will be marketed daily as result of new industrial contracts. The second line will be to the Girven plant of Pecos Valley Power and Light Company where a daily consumption of about 10,000,000 cubic feet of gas is anticipated.

The latter line will consist of about 50 miles of eight-inch welded pipe. Completion of both lines will be hurried as considerable pressure has been brought to bear on the two operators in the Big Lake field by the Texas Railroad Commission for alleged gas waste.

Bexar County Gets Six-Inch Line

San Antonio.—Southern Gas Company is building a one-mile six-inch welded natural gas line from the Dobrowolski gas field, Bexar County, to its system supplying San Antonio. There are four producing gas wells in the field, and three additional wells are being drilled. Penn-Texas Oil Company owns two of the four producers, each gauging about 1,000,000 cubic feet daily, with 200 pounds pressure. Those two wells and one owned by Eckert et al are on the Dobrowolski land. A. J. Swearingen is owner of the other gas producer. Each of the three operators mentioned above is drilling another well. The gas production is from depths ranging from 650 to 700 feet, about the same depth as oil production is found in the adjoining oil field, bearing the same name.

Summarized Review of Field Results

	Completions		Oil Wells		Gas Wells		Failures		Initial Prod.	
State—	This week.	Last week.	This week.	Last week.	This week.	Last week.	This week.	Last week.	This week.	Last week.
Arkansas	4	5	3	2	..	1	1	2	1,070	35
California	25	14	24	14	..	..	1	..	28,550	9,300
Illinois	8	3	3	3	..	..	5	..	83	103
Indiana	1	15	..	5	..	4	1	6	..	42
Kansas	14	9	4	5	5	4	5	..	3,200	1,015
Kentucky	16	14	6	5	2	..	8	9	177	37
Louisiana	18	15	9	4	4	7	5	4	6,590	593
Michigan	6	4	2	1	3	..	1	3	800	50
Mississippi	1	1	..	..	..	1	1	..	..	...
New Mexico	6	2	6	2	..	..	..	..	74,470	11,100
New York	5	8	4	7	..	1	1	..	8	20
Ohio	23	34	3	13	10	7	10	14	155	403
Oklahoma	51	62	25	39	5	13	21	10	99,006	154,963
Pennsylvania	14	28	8	19	1	5	5	4	19	141
Texas	93	58	61	25	5	6	27	27	40,858	18,203
West Virginia	17	15	3	5	13	7	1	3	8	740
Total	302	287	161	149	48	56	93	82	254,994	196,745
Increase	15	..	12	..	..	..	11	..	58,249	.....
Decrease	..	..	..	..	8	..	..	..	...	....

MARKET SECTION

Crude Oil Price Quotations

(Revised to November 4, 1930)

Price Changes

Effective October 29, Magnolia Petroleum Company reduced prices for crude in Louisiana and Arkansas, reductions ranging from 20 cents to 36 cents a barrel. On the same date, Smackover, Arkansas, crude was posted at a flat price of 70 cents a barrel; the same price applying to El Dorado crude.

Effective October 30, Gulf Pipe Line Company posted reduced prices for all grades of Gulf Coast oil, bringing prices on an average of 20 cents a barrel below the schedule posted by Humble Oil & Refining Company on October 28. Grade "A" was reduced to 80 cents a barrel and Grade "B" 69 cents for below 25 gravity, with a two cent differential for each degree up to and above 40 gravity; the latter grade commanding a price of $1.01 a barrel.

Effective November 1, Stanolind Crude Oil Purchasing Company announced a revision in Mid-Continent crude price schedules whereby all crude of 40 gravity and above would be paid for at the top price of $1.07 a barrel. All Mid-Continent purchasers met the new schedule, abolishing differentials above 40 gravity.

Effective November 1, Joseph Seep Purchasing Agency announced further reductions of from 10 cents a barrel on Bradford grade oil and 15 cents a barrel on all Pennsylvania grade crudes.

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov. 1, 1930)	$2.30
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) (Effective, Nov. 1, 1930)	1.95
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) (Effective Nov. 1, 1930)	2.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 1, 1930)	1.85
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 1, 1930)	1.60
Wayne district crude in Cumberland lines (West Virginia) (Effective July 23, 1930)	1.17
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Oct. 28, 1930)	1.25
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective July 23, 1930)	1.30
Somerset Oil in Eureka Pipe Lines (Effective July 23, 1930)	1.14
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929)*	0.60

*Oil run prior to July 1, 1929 is $2.10 per bbl.

(Posted by Stoll Oil Refining Company)

Oil City, Ky., oil in Stoll lines (Effective July 25, 1930)	1.35

MICHIGAN

(Posted by Dixie Oil Company)

Traverse and Dundee (Muskegon), effective April 16, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, on gravity basis prior to reduction on Oct. 27, 1930.

(Posted by Pure Oil Company)

Midland, Midland County ,Aug. 21, 1930)	$1.30

CENTRAL STATES FIELDS

(Posted by Ohio Oil Company)

(Effective Oct. 28, 1930)

Wooster	$1.35	Princeton	1.30
Lima	1.10	Illinois	1.30
Waterloo	1.20	Plymouth	.88
Indiana	.87	W. Kentucky	1.15

CANADIAN CRUDE

(Posted by Imperial Oil Refineries, Ltd.)

(Effective October 28, 1930)

Petrolia	$1.50
Oil Springs	1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co., and Stanolind Crude Oil Purchasing Company, Effective Nov. 1, 1930. Carter Oil Company Same Schedule Effective Oct. 28.

Below 29	$0.65	37-37.9	.98
29-29.9	.69	38-38.9	1.01
30-30.9	.73	39-39.9	1.04
31-31.9	.77	40-40.9	1.07
32-32.9	.81	41-41.9	1.10
33-33.9	.85	42-42.9	1.13
34-34.9	.89	43-43.9	1.16
31-31.9	.92	44 and above	1.19
36-36.9	.95		

Magnolia Petroleum Company Effective October 28.

Below 26	.53	27-27.9	.61
26-26.9	.57	28-28.9	.65

From here to 40 and above gravity same schedule as above.

(Continued on page 98)

CRUDE OIL PRICES AT THE WELL

San Francisco, Cali., September 12, 1930

Effective September 15, 1930, at 7:00 A. M. the following are the current prices offered by STANDARD OIL COMPANY OF CALIFORNIA For Crude Oil at the Well (Except Elwood Terrace as below). **Price Per Barrel in Fields Indicated**

Gravity	Signal Hill	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea Canou	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	Gravity
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ .70			$ .70	$ .70	$ 70	$ .70	$ .70		$ .55	$ .55	$ .55	$ .55	$ .55	$ .55	14-14.9
15-15.9	.70	.70	.70	.70	.70	.70			.70	.70	.70	.70	.70		.55	.55	.55	.55	.55	.55	15-15.9
16-16.9	.70	.70	.70	.70	.70	.70			.70	.70	.70	.70	.70		.55	.55	.55	.55	.55	.55	16-16.9
17-17.9	.70	.70	.70	.70	.70	.70			.70	.70	.70	.70	.70		.55	.55	.55	.55	.55	.55	17-17.9
18-18.9	.76	.76	.76	.76	.76	.76			.76	.76	.76	.71	.76		.55	.62	.62	.62	.62	.62	18-18.9
19-19.9	.82	.82	.82	.82	.82	.82			.82	.82	.82	.77	.82			.70	.70	.70	.70	.70	19-19.9
20-20.9	.88	.88	.88	.88	.88	.88			.88	.88	.87	.83	.87			.78	.78	.78	.78	.78	20-20.9
21-21.9	.94	.94	.94	.94	.94	.94			.94	.94	.93	.90	.93	$ .92		.86	.86	.86	.86	.86	21-21.9
22-22.9	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	.98	.97	.98	.95		.94	.94	.94	.94	.94	22-22.9
23-23.9	1.07	1.07	1.07	1.07	1.07	1.07			1.07	1.07		1.05	1.04	1.01		1.02	1.02	1.02	1.02	1.02	23-23.9
24-24.9	1.12	1.12	1.12	1.12	1.12	1.12	$1.12		1.12	1.12		1.08	1.08	1.05		1.06	1.06	1.06	1.04	1.04	24-24.9
25-25.9	1.17	1.17	1.17	1.17	1.17	1.17	1.17		1.17	1.17		1.11	1.12	1.09		1.10	1.10	1.10	1.06	1.06	25-25.9
26-26.9	1.22	1.22	1.22	1.22	1.22	1.22	1.22		1.22	1.22		1.15	1.16	1.13		1.14	1.14	1.14	1.08	1.08	26-26.9
27-27.9	1.26	1.26	1.26	1.26	1.26	1.26	1.27		1.26	1.26		1.19	1.21	1.18		1.18	1.18	1.18	1.11	1.10	27-27.9
28-28.9	1.30	1.30	1.30	1.30	1.30	1.30	1.32		1.30	1.30		1.23	1.25	1.23		1.23	1.23	1.23	1.15		28-28.9
29-29.9	1.34	1.34	1.34	1.34		1.34	1.37			1.34		1.26	1.29	1.28		1.29	1 29	1.29	1.19		29-29.9
30-30.9	1.38	1.38	1.38	1.38		1.38	1.42			1.38		1.29	1.33	1.33		1.35	1.35	1.35	1.23		30-30.9
31-31.9	1.43	1.43	1.43	1.43		1.43	1.43	F. O. B. Ship						1.38		1 41	1.41	1.41	1.27		31-31.9
32-32.9	1.48	1.48	1.48	1.48			1.52							1.43		1.47	1.47	1.47	1.31		32-32.9
33-33.9							1.57							1.48		1.53	1.53	1.53	1.35		33-33.9
34-34.9							1.62	$1.32						1.53				1.59	1 39		34-34.9
35-35.9							1.66	1.39						1.58				1.65	1.43		35-35.9
36-36.9							1.72	1.46						1.63							36-36.9
37-37.9							1.78	1.53						1.68							37-37.9
38-38.9							1.84	1.60						1.73							38-38.9
39-39.9							1.90	1.66						1.78							39-39.9
40-40.9							1.96	1.72													40-40.9
41-41.9							2.02	1.78													41-41.9
42-42.9							2.08	1.84													42-42.9

KETTLEMAN HILLS*

35-39.9	$1.10
40-44.9	1.20
45-45.9	1.35
50-54.9	1.50
55 and above	1.65

*Posted by Union Oil Company.

MARKET SECTION

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 97*)

NORTH TEXAS

Posted by All Purchasers Except Magnolia Petroleum Company

Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran, and Nocona crudes:

Below 29	$ .65	35-35.9	.92
29-29.9	.69	36-36.9	.95
30-30.9	.73	37-37.9	.98
31-31.9	.77	38-38.9	1.01
32-32.9	.81	39-39.9	1.04
33-33.9	.85	40 and above	1.07
34-34.9	.89		

Magnolia Petroleum Company, Effective October 28

Below 26	.53	27-27.9	.61
26-26.9	.57	28-28.9	.65

From here to 40 and above gravity same as schedule above.

PANHANDLE

Posted by All Purchasers, Effective Oct. 28, 1930

Gray County Crude

Below 29	$ .50	35-35.9	.77
29-29.9	.54	36-36.9	.80
30-30.9	.58	37-37.9	.83
31-31.9	.62	38-38.9	.86
32-32.9	.66	39-39.9	.89
33-33.9	.70	40 and above	.92
34-34.9	.74		

Carson and Hutchinson County Crudes

Below 29	$ .45	35-35.9	.72
29-29.9	.49	36-36.9	.75
30-30.9	.53	37-37.9	.78
31-31.9	.57	38-38.9	.81
32-32.9	.61	39-39.9	.84
33-33.9	.65	40 and above	.87
34-34.9	.69		

WEST TEXAS

Posted by All Purchasers Except The Texas Company, Effective October 28, 1930

Winkler and Pecos County Crudes:

Below 25	$ .55	29-29.9	.65
26-26.9	.59	30-30.9	.67
27-27.9	.61	31-31.9	.69
28-28.9	.63	32-32.9	.71

The Texas Company, Effective Nov. 1, 1930

(Winkler County)

Same prices as above, with the addition of following gravities:

33-33.9	.73	35-35.9	.77
34-34.9	.75	36 and above	.79

Crane, Upton, Crockett, Ector, Ward, Loving, Mitchell,* Howard, and Glasscock Counties, Texas, and Lea County, New Mexico crudes

Posted by All Purchasers, Effective Oct. 28, 1930

Below 25	$ .50	31-31.9	.64
25-25.9	.52	32-32.9	.66
26-26.9	.54	33-33.9	.68
27-27.9	.56	34-34.9	.70
28-28.9	.58	35-35.9	.72
29-29.9	.60	36 and above	.74
30-30.9	.62		

*Magnolia Petroleum Company uses Gravity scale and Coltex Refining Company pays flat price of 60 cents for Mitchell County.

GULF COAST

(Posted by Humble Oil & Refining Company, The Texas Company and Sun Company)

Gulf Coast Crude will be classified as follows in fields designated below:

Goose Creek, Hull, Boling, Liberty, Orange, Pierce Junction, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugar Land, West Columbia and Humble crudes:

"A" GRADE—All crudes conforming to the following tests:

Viscosity—Not less than 100 seconds at 100° F. Saybolt.

Sulphur—Not over .4%.

Beaume Gravity—Not over 25 at 60° F.

Cold test of distillates having a viscosity of 1000 seconds at 100° F, shall not be over 5° F.

"A" GRADE—$1.00.

"B" GRADE — Embraces all Coastal crude which does not meet the test for "A" grade crude:

Below 25	$ .75	33-33.9	1.08
25-25.9	.92	34-34.9	1.10
26-26.9	.94	35-35.9	1.12
27-27.9	.96	36-36.9	1.14
28-28.9	.98	37-37.9	1.16
29-29.9	1.00	38-38.9	1.18
30-30.9	1.02	39-39.9	1.20
31-31.9	1.04	40 and above	1.22
32-32.9	1.06		
Markham (The Texas Company)			.75

Posted by Gulf Pipe Line Company, Effective October 30, 1930

High Island	$		.75
Grade "A"			.80
Grade "B"			
Below 25	$ .69	33-33.9	.87
25-25.9	.71	34-34.9	.89
26-26.9	.73	35-35.9	.91
27-27.9	.75	36-36.9	.93
28-28.9	.77	37-37.9	.95
29-29.9	.79	38-38.9	.97
30-30.9	.81	39-39.9	.99
31-31.9	.83	40 and above	1.01
32-32.9	.85		
Jennings, La.			.80

SOUTHWEST TEXAS

Posted by All Purchasers, Effective Oct. 28, 1930

Refugio Heavy crude, below 25 gravity			.75
Refugio Light crude:			
25-25.9	$ .92	33-33.9	1.08
26-26.9	.94	34-34.9	1.10
27-27.9	.96	35-35.9	1.12
28-28.9	.98	36-36.9	1.14
29-29.9	1.00	37-37.9	1.16
30-30.9	1.02	38-38.9	1.18
31-31.9	1.04	39-39.9	1.20
32-32.9	1.06	40 and above	1.22
Mirando crude	$		.75
Salt Flat crude			.90
Darst Creek crude			.90
Pettus crude			1.10
Luling			1.10
Corsicana, heavy			.75

Determination of quality, deductions, adjustment for temperature, etc., on oil purchased in Texas, shall be in accordance with the rules and regulations of the Texas Railroad Commission, and on oil purchased in New Mexico shall be in accordance with the rules and regulations of the Corporation Commission of New Mexico.

LOUISIANA-ARKANSAS

All Purchasers Except Magnolia Petroleum Co., Effective Oct. 29, 1930

Pine Island District, Haynesville District, Bull Bayou District, El Dorado District, Rainbow District, Cotton Valley

Below 29	$ .65	37 to 37.9	.98
29 to 29.9	.69	38 to 38.9	1.01
30 to 30.9	.73	39 to 39.9	1.04
31 to 31.9	.77	40 to 40.9	1.07
32 to 32.9	.81	41 to 41.9	1.10
33 to 33.9	.85	42 to 42.9	1.13
34 to 34.9	.89	43 to 43.9	1.16
35 to 35.9	.92	44 and above	1.19
36 to 36.9	.95		
Urania, La.			.75
Bellevue, La.			1.00

Magnolia Petroleum Company, Effective October 30, 1930

Below 26	$ .53	27-27.9	.61
26-26.9	.57	28-28.9	.65

From here prices same as schedule above.

STEPHENS

Below 29	$ .54	31 to 31.9	.66
29 to 29.9	.58	32 and above	.70
30 to 30.9	.62		
Smackover			.70
El Dorado, East Field			.70

ROCKY MOUNTAIN FIELDS

(Salt Creek prices effective April 10, 1930)

‡Salt Creek	29-29.9	$	1.00
" "	30-30.9		1.05
" "	31-31.9		1.10
" "	32-32.9		1.15
" "	33-33.9		1.185
" "	34-34.9		1.22
" "	35-35.9		1.255
" "	36-36.9		1.29
" "	37 and above		1.325
Elk Basin (Effective Oct. 28, 1930)			1.25
Grass Creek light			1.25
Big Muddy			1.00
Lance Creek			1.33
Rock Creek			1.01
Mule Creek			1.20
Rex Lake			1.10
‡Osage			1.25
‡Cat Creek, Montana			1.55
Pendera			1.45
Sunburst, Montana			1.55
‡Hogback, New Mexico			1.40
Artesia, New Mexico			.75

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

STATE CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

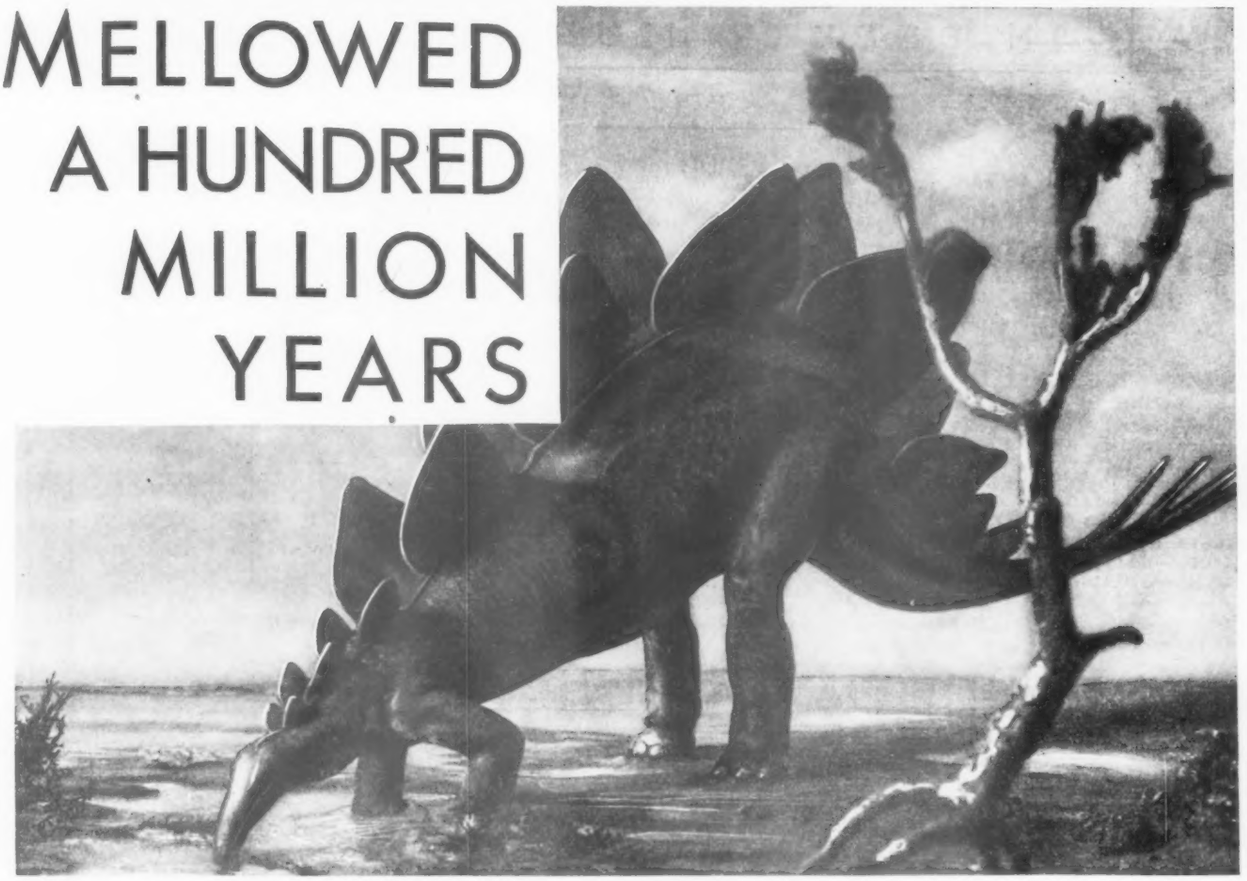
Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MELLOWED A HUNDRED MILLION YEARS



While the Stegosaurus drank from PENNSYLVANIA'S springs

You may pass by most oil advertising but you couldn't leaf over this one without reading it—could you? The illustration stopped you just as other Mobiline illustrations like it are now compelling the attention of fifty million people all over the country. And the copy is telling these millions, in unmistakable terms, why Sinclair Pennsylvania Mobiline is the finest Pennsylvania grade motor oil on the market.

If that's a strong statement, listen to this: Mobiline is made 100% from Bradford-Allegany crude oil—the highest priced of all Pennsylvania grade crude oils—the crude that was formed in the Devonian Age a hundred million years ago. At the big, new Sinclair refinery at Wellsville, N. Y., this crude is de-waxed at as low as 60° F. below zero and stripped almost entirely of its carbon-forming compounds. Drop for drop Mobiline runs more uniform than other Pennsylvania oils and holds its rich, green color longer. It is the ideal oil for winter and summer—recommend it according to the Sinclair Law of Lubrication. Try a crankcaseful in your own car and be convinced.

A post card addressed to our nearest office will bring a Sinclair representative who will give you full details.

Sinclair Refining Company, (Inc.), New York, Atlanta, Chicago, Houston, Fort Worth, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905. Renewed 1925

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

Guaranteed by SINCLAIR REFINING CO. INC. to be 100% pure PENNSYLVANIA GRADE OIL

35¢ *per quart*

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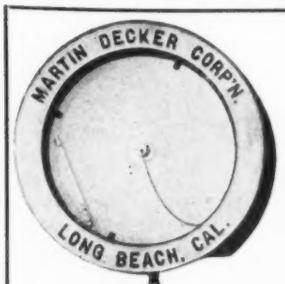
MARTIN-DECKER MUD PUMP GAUGE



CREW
(Reading Left to Right)
Ruff-Neck—J. H. Duncan
Ruff-Neck—Geo. F. Vernon
Derrickman—Dick Kellar
Cathead—Fred Conkey
Driller—A. V. Lownes

Walters
No. 1
Chiksan Oil
Co., Ltd.,
Signal Hill,
California

ENTIRE SATISFACTION
with the
Martin-Decker Non-Clog Mud Pump Gauge

CHIKSAN OIL COMPANY, LTD.
401 CHAPMAN BUILDING
FULLERTON, CALIFORNIA

Oct. 6, 1930

Martin-Decker Corporation,
3431 Cherry Avenue
Long Beach, California.
Gentlemen:

Some time ago we installed on our well Walters No. 1, a Martin-Decker Non-Clog Mud Pump Gauge, and wish to say that it has been entirely satisfactory.

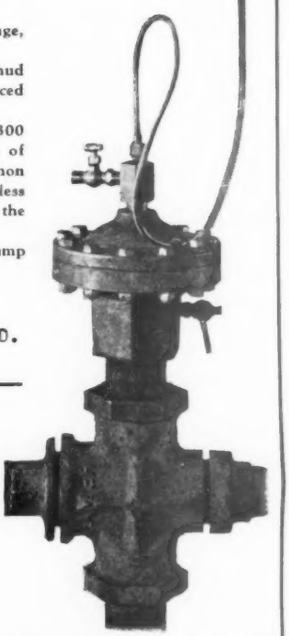
We have tried out a number of different types and this is the first one that has not only kept the mud out of the line and dampened the gauge action, but also was hooked up so that the gauge could be placed away from the pump vibration.

Another important point is that the pulsation dampener is adjustable, as a dampener for 200 to 300 pounds gauge pressure is not sufficient for 600 to 800 pounds, but any pressure range can be taken care of with the adjustment. There is no need to tell "WHY" we use a Mud Pump Gauge as it is common knowledge, but to get one that will be accurate, have a small hand movement under normal use, regardless of pressure range, have the gauge placed off the pump away from vibration, and keep the mud out of the line so that the unit will last, has been the difficulty.

This, we feel from our experience, has now been solved by the Martin-Decker Non-Clog Mud Pump Gauge, and it is our intention to use this equipment on every well which we drill from now on.

Yours very truly,

CHIKSAN OIL COMPANY, LTD.
BY W. L. Stout



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Reed Roller Bit Company
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LONG BEACH
California

Foreign Distributors
Oil Well Supply Company
Pittsburgh, Pa.

WEIGHT RECORDING, MEASUREMENT AND CONTROL

PERSONAL MENTION-MEN YOU KNOW

R. B. Whitehead, chief geologist, Atlantic Oil Producing Company, has been elected chairman of the Dallas branch of the American Association of Petroleum Geologists. Other new officers include: G. B. Moody, geologist for The California Company, vice-chairman; and Sam M. Aronson, geologist for Atlantic Oil Producing Company, secretary.

Wirt Franklin, president of the Independent Petroleum Association of America, with headquarters at Tulsa, will visit the Pacific Coast territory some time during November. The California division of the organization will arrange for special meetings during his visit.

Clarence J. Berry, pioneer California independent operator, died October 23 in a Los Angeles hospital, following an operation for an attack of acute appendicitis. He was 63 years old and had engaged in development of the Midway-Sunset-Maricopa district for a generation.

Edward I. McCray, at one time prominent in California oil circles, died last week in Los Angeles at the age of 66. He was associated with Lyman Stewart and other pioneers as early as 1884.

W. C. Mendenhall of the U. S. Geological Survey at Washington, D. C., has been doing mapping and surveying work at Kettleman Hills.

Claude Stevenson, pipe line engineer for The Texas Company of California, was fatally burned October 28 when a pipe line he was testing burst and the oil caught fire. He was 37 years old and lived at Inglewood, California.

W. C. Lynch, head of General Petroleum Corporation's personnel department, recently attended the annual meeting of the National Safety Council at Pittsburgh, having represented the petroleum section of the Pacific division as chairman at the meeting.

A. W. Weeks, district geologist for Shell Petroleum Corporation at San Antonio, Texas, has returned from a three weeks' vacation in Michigan, Wisconsin and Illinois.

George H. Jaques, formerly a director and general superintendent of Midwest Refining Company, has been made vice-president in charge of operations for the company succeeding R. S. Ellison who recently became president of Stanolind Crude Oil Purchasing Company.

Mr. and Mrs. Raymond Ford, Houston, will leave this week on the special train to attend the American Petroleum Institute meeting at Chicago, after which they will make a business and pleasure trip to Williamsport, Pennsylvania, and New York. At Williamsport Mr. Ford will visit at the factory of the Williamsport Wire Rope Company, for which he is district manager with headquarters in Houston.

R. Ogarrio, vice-president and general manager of the producing department of The Texas Company, was in Houston this week, accompanied by his assistant, R. F. Baker.

W. B. Lucas, engineer with the Iraq Petroleum Company, Ltd., in Iraq, is spending some time visiting the California oil fields, and studying new oil field equipment. He visited the permanent display at the Oil Equipment and Engineering Exposition in Los Angeles, and was accompanied to the fields by W. J. Blankenship, technical manager of the exposition. His address is Box 61, Bagdad, Iraq.

N. P. Wilson of Casper, pioneer oil operator in Wyoming fields, died suddenly at his home October 23 following a heart attack. He was buried in Casper.

GEOLOGISTS BARBECUE

Houston.—The Houston Geological Society was entertained November 1 by the Brenham Chamber of Commerce at an old-style Southern barbecue at the Brenham Rod and Reel Club, and the program for the day also included field trips to the Clay Creek and Raccoon Bend fields which proved greatly interesting. The Clay Creek field, Washington County, is operated by the Sun Oil Company, and Raccoon Bend, Austin County, by Humble Oil & Refining Company and Valley Oil Corporation; and representatives of those companies gave detailed discussions on development and conducted tours of inspection of the fields. The geologists made the trip by automobile, and over 50 cars were used.

Addison H. Beale, president of A. M. Byers Company, Pittsburgh, died October 28.

L. E. Barrows, manager West Texas and New Mexico operations of The Texas Company, attained his goal in golfing by scoring a hole in one at hole number 6 of the River Crest course, Fort Worth, while playing on Sunday afternoon, November 2, with J. D. Collett, Fort Worth operator, and J. W. Mitchell and wife.

J. C. Van Eck, New York, president, and F. Godber, London, England, director, both of Shell Union Oil Corporation; Dr. Schurman, chief geologist Royal Dutch Company, Hague; U. De B. Daly, St. Louis, president; G. S. Rollin and Dr. W. Van Holst Pellekaan, vice-presidents Shell Petroleum Corporation, with headquarters at St. Louis, visited the Van field on October 30 and spent most of the following day in conference with officials of the Shell Petroleum Corporation at the Dallas district office of the latter concern. The visitors departed from Dallas October 31 for a trip through the Oklahoma City field.

SAFETY CONTEST WINNERS

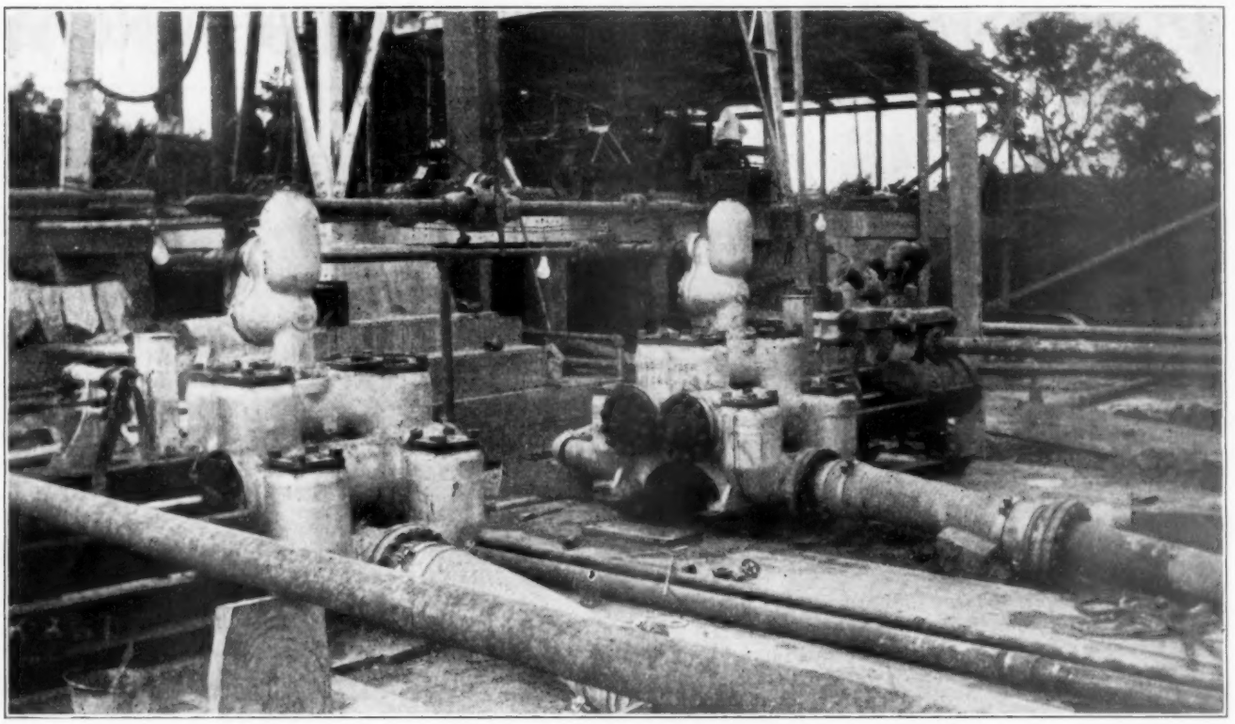
Holmes Safety Association's first aid team representing Standard Oil Company of Louisiana at Baton Rouge, won first prize in the annual safety first contest held here October 29 under auspices of the Louisiana-Arkansas Safety Council sponsored by the Louisiana-Arkansas division of Mid-Continent Oil & Gas Association.

Second place was won by Louisiana Oil Refining Corporation's team from its Gas Center refinery near Shreveport. Third place went to Ohio Oil Company's team from Haynesville, Louisiana; fourth, to Louisiana Oil Refining Corporation's other team, and fifth to Ohio Oil Company's Cotton Valley team. Chief judge was J. J. Forbes of the United States Bureau of Mines, Pittsburgh. A banquet followed the contest.

Imperial Oil, Ltd., Toronto, Canada, has recently issued the Golden Jubilee Number of "Imperial Oil Review," commemorating the company's fiftieth anniversary. This issue in 78 pages, contains historical descriptions depicting the development of the company and the development of Canada, interestingly and completely illustrated. Articles covering a variety of subjects depict the development in the three branches of the company—production, refining and marketing.

B. B. Thompson, petroleum engineer for Burma Oil Company, is making an extensive study of American drilling equipment manufactured in California and contemplates the purchase of a large quantity of material for field development abroad.

A. M. Porter, R. S. Tulin, J. S. Watson and staff of the natural gas and gasoline department of Shell Oil Company have been transferred from the Wilmington refinery division to production division, Higgins Building Los Angeles, effective October 15, 1930.



BIG ENOUGH — SIZE 14" x 7¼" x 18"

. . . . . for any rotary drilling job!

These WILSON SNYDER Side Suction slush pumps, with the 10-inch suction opening on either side, are designed to deliver, continuously, under high steam pressure the desired quantity of fluid.

Cost sheets of pump parts and replacements show that WILSON SNYDER pumps can be operated over a long period of time with little expense.

Highest quality is the lowest ultimate cost.

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Oklahoma--Kansas Field Notes

FLOYD L. SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Oklahoma Commission Further Restricts Production

OKLAHOMA CITY.—The State Corporation Commission late Tuesday, October 28, issued a proration order which will restrict production in practically every field in Oklahoma during the last three months of 1930. In addition to limiting production in old as well as new fields it is designed to more equitably apportion the market outlet between the two types. The new order follows two weeks of investigation during which time protestants sought to have proration entirely eliminated or greatly modified over the practice which has heretofore been in effect. A majority of the protest was in regard to the recommendation of the operator's committee to prorate all wells making over five barrels daily. Operators in Stevens County claimed that they would be forced into bankruptcy should such an order be invoked and the commission has granted a special hearing to be held on November 7, giving this group an opportunity to submit more complete information in substantiation of their claims. On November 5, the commission will meet to further discuss a proposed change in the methods of prorating the Oklahoma City pool. Up to the present time this pool has been restricted on a time basis because of inadequate storage for running potential tests. All other fields under proration have been limited on the percentage of daily potential basis. Daily potential production for Oklahoma was estimated as follows:

	Oklahoma City	Remainder of State	Total
October	2,800,000	838,000	3,638,000
November	3,319,000	824,000	4,143,000
December	3,446,000	798,000	4,244,000

The probable market outlet for the state was estimated at 550,000 barrels daily, during October, 545,000 barrels in November, and 535,000 barrels in December.

In setting up a proration schedule the commission divided the pools into eight classes. Class A includes those pools not previously prorated and in all such pools where the per well per day average is in excess of five barrels the amount of production in excess of this figure will be curtailed to 50 per cent. For example, an 80-acre lease with eight producing wells thereon which are making a total of 100 barrels daily will be prorated but an exemption of 40 barrels will be allowed and the remaining 60 barrels cut to 30 barrels, so that the total allowable production from the lease as a whole will be 70 barrels. It is estimated that proration in this class will decrease the production from such fields approximately 50,000 barrels daily and that this curtailment will fall upon approximately 10,000 wells out of a total of approximately 60,000 wells not hitherto prorated, and that of the said 60,000 wells, the 50,000 smallest wells will remain uncurtailed under this plan. Class B includes 16 semi-flush pools which will be allowed 50 per cent of potential. Class C includes the Carr City and South Earlsboro pool which will be curtailed as follows:

Average Barrels Per Well Per Lease

300 barrels or more, allowable production 25 per cent.

200 to 300 barrels, allowable production 30 per cent, but not over 75 barrels.

100 to 200 barrels, allowable production 37½ per cent, but not over 60 barrels.

Less than 100 barrels, allowable production 50 per cent.

(*See next page*)

Richards Heads Oklahoma Proration Committee

TULSA.—Alvin Richards, Pure Oil Company, recently elected president of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association, has accepted the chairmanship of the state-wide proration committee, which is a committee of the Mid-Continent Oil & Gas Association created to function in an advisory capacity and as a fact-finding body in aid of the proration movement.

Mr. Richards succeeds C. C. Herndon, Skelly Oil Company, who for the past year has served also in the double capacity as president of the Kansas-Oklahoma division and chairman of the state-wide proration committee. Mr. Herndon declined to serve for another year although he was urged by many oil operators to continue in that capacity in which it is universally conceded he exerted a great sustaining influence in the conservation movement.

The new state-wide proration committee for the ensuing year consists of the following members: Alvin Richards, Pure Oil Company, chairman; Burdette Blue, Indian Territory Illuminating Oil Company, vice-chairman; E. R. Filley, The Texas Company; Wirt Franklin, Wirt Franklin Petroleum Corporation; E. J. Nicklos, Continental Oil Company; Joe S. Sidwell, Prairie Oil & Gas Company, and R. M. Young, Carter Oil Company.

This committee met in a joint session with the proration legal committee November 5, at association headquarters to make a preliminary survey of the operation of the proration order number 5369 recently issued by the corporation commission.

The proration legal committee, which will advise on legal matters and assist the attorney general in pending litigation, is composed of J. C. Denton, Mid-Continent Petroleum Corporation, chairman; W. P. Z. German, Skelly Oil Company, vice-chairman; Wm. O. Beall, Sinclair Company; J. H. Brennan, Barnsdall Oil Company; Frank Burford, Phillips Petroleum Company, et al; P. J. Carey, Cromwell-Franklin Company; Joe T. Dickerson, Shell Petroleum Corporation; J. W. Finley, Empire Companies; W. C. Franklin, Tulsa; W. P. McGinnis, Indian Territory Illuminating Oil Company; Geo. Otey, Wirt Franklin Petroleum Corporation; Jas. A. Veasey, Carter Oil Company, and Harry H. Smith, Mid-Continent Oil & Gas Association.

Class D includes only the Konawa pool which will be prorated according to the following schedules:

Average Barrels Per Well Per Lease

400 barrels or more, allowable production 18¾ per cent.

300 to 400 barrels, allowable production, 22½ per cent but not over 75 barrels.

200 to 300 barrels, allowable production 26¼ per cent but not over 67 barrels.

100 to 200 barrels, allowable production 37½ per cent but not over 53 barrels.

Less than 100 barrels, allowable production 50 per cent.

Owing to the changing relation between the potential production and the market outlet, East Earlsboro and Wanette have been classed together under E, and will be limited to the present market outlet which, in the case of the former, is 15,000 barrels per day, and in the case of the latter, is 7200 barrels per day. The umpire and operator's committee will be required to check the relation between potential and market outlet and report to the commission.

The Tatums and Chandler pools have new extensions with potentially large wells along with old small wells, which caused them to be grouped together under Class F. Wells with a daily potential of 400 barrels or more will be allowed 100 barrels daily; and wells with potential from 100 to 400 barrels per day will be allowed 50 barrels per day.

Class G includes West Perry, Orlando, and Township 20n, Range 4w, so classified because of the uncertainty of their possibilities. West Perry will be allowed 600 barrels daily, Orlando 400 barrels, and Township 20n, Range 4w, 400 barrels until otherwise ordered by the commission.

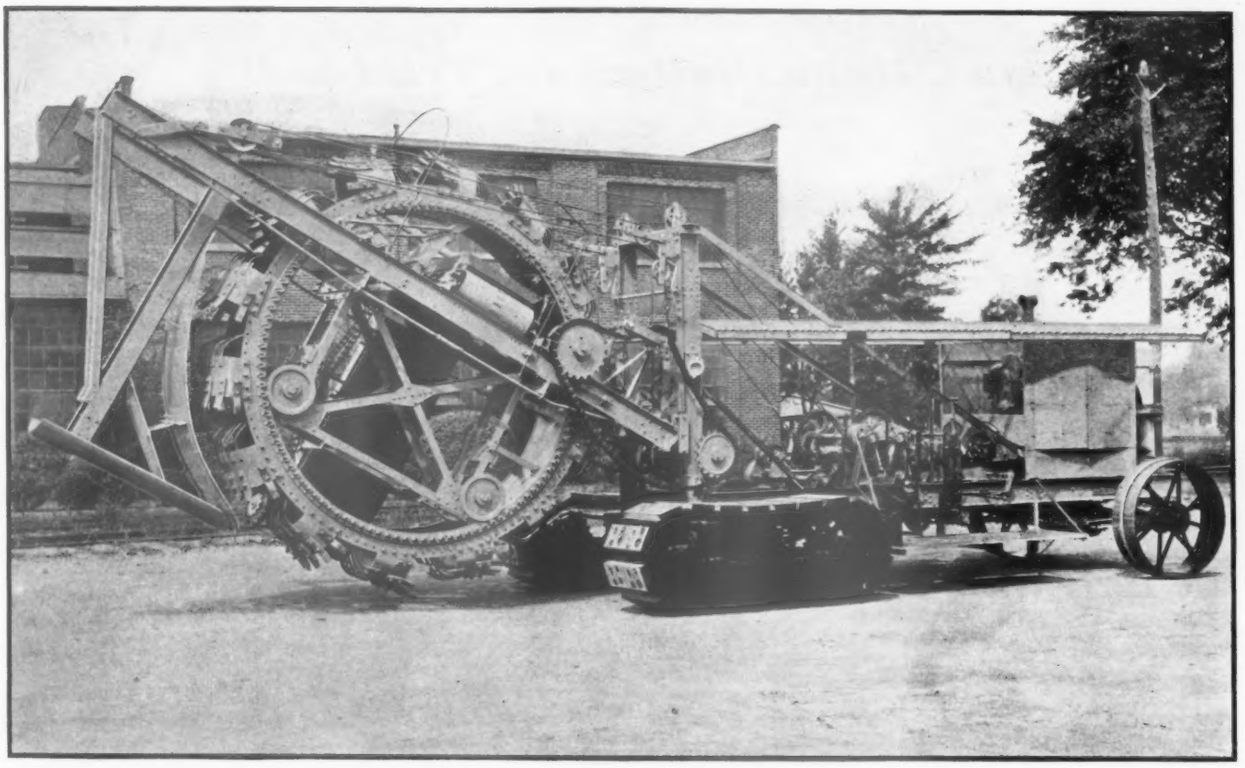
All leases in pools classified under A, B, C, D, E, and F, not capable of making in excess of 50 barrels daily will be allowed an exemption of five barrels per well per day and the curtailment of 50 per cent applied only to the production in excess of five barrels per well per day.

In fixing proration for the Oklahoma City pool the committee estimated the daily market outlet at 130,000 barrels based upon committments of purchasing companies and recommended that production be limited to the outlet as determined from time to time.

The committee made a general recommendation that the corporation commission emphasize the right of any producer to come before it and complain of or criticise the administration of the order and have his case heard and, if possible, any irregularity corrected by ancillary orders.

Suggested Potential and Allowable Production of Crude Oil—State of Oklahoma, October 1, 1930, to December 31, 1930

	OCTOBER		NOVEMBER		DECEMBER	
	Estimated Potential	Estimated Production	Estimated Potential	Estimated Production	Estimated Potential	Estimated Production
Class A Pools:	259,280	202,965	257,040	201,770	254,950	200,725
Class B:						
Allen (Wilcox)	8,825	4,413	8,335	4,168	7,920	3,960
Allen (Cromwell)	17,389	8,695	16,867	8,433	16,361	8,180
Bowlegs	27,477	13,734	26,653	13,326	25,853	12,927
Earlsboro (proper)	27,805	13,903	26,971	13,485	26,162	13,081
Earlsboro Townsite	10,000	5,000	9,700	4,850	9,400	4,700
Little River	45,132	22,566	43,778	21,889	42,465	21,232
East Little River	23,482	11,741	22,700	11,350	22,000	11,000
Marshall-Lovell	5,000	2,500	5,000	2,500	4,500	2,250
Maud	5,541	2,771	5,375	2,688	5,214	2,607
Mission	14,233	7,117	13,806	6,903	13,392	6,696
Sasakwa	10,300	5,150	9,785	4,893	9,295	4,648
Searight	12,809	6,405	12,425	6,212	12,052	6,026
Seminole	27,616	13,808	26,788	13,394	25,984	12,992
East Seminole	4,021	2,011	3,900	1,950	3,783	1,892
St. Louis	37,803	18,902	36,669	18,334	35,569	17,784
Sub-Total	277,433	138,716	268,752	134,375	259,950	129,975
Class C:						
Carr City	22,415	6,936	25,965	7,783	28,510	8,380
South Earlsboro	36,000	9,000	33,000	8,250	30,000	7,500
Sub-Total	58,415	15,936	58,965	16,033	58,510	15,880
Class D:						
Konawa	89,500	18,188	88,365	17,933	84,234	17,117
Class E:						
East Earlsboro	45,000	15,000	43,000	15,000	40,000	15,000
West Asher-Anette	50,000	7,200	45,000	7,200	41,000	7,200
Sub-Total	95,000	22,200	88,000	22,200	81,000	22,200
Class F:						
Tatums	18,000	4,000	15,000	4,000	12,000	4,000
Chandler	25,000	2,500	25,000	2,500	25,000	2,500
Sub-Total	43,000	6,500	40,000	6,500	37,000	6,500
Class G:						
West Perry	1,200	600	1,150	600	1,100	600
Orlando	850	400	825	400	800	400
Twp. 20n, R 4w.	800	400	775	400	750	400
Sub-Total	2,850	1,400	2,750	1,400	2,650	1,400
Class H:						
Oklahoma City	2,800,000	131,095	3,319,000	134,589	3,446,000	131,003
Wildcat Wells	3,000	3,000	10,000	200	10,000	200
New Wells (Outside of Oklahoma City) Free Production for Testing	5,000	5,000	5,000	5,000	5,000	5,000
Unprorated Small Wells in Prorated Areas	5,000	5,000	5,000	5,000	5,000	5,000
Total State	3,638,478	550,000	4,142,872	545,000	4,244,294	535,000



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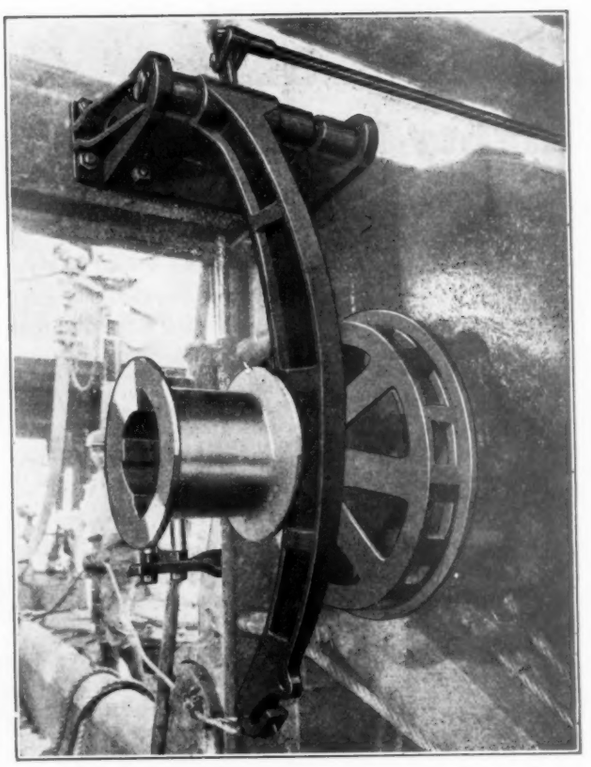

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Extend Oklahoma City Pool Nearly Mile Northwest

OKLAHOMA CITY—The Oklahoma City pool was extended three-eighths of a mile northwest when the T. B. Slick interests completed Wespaco 1, NE SW SE Section 34-12n-3w, bringing production within about three-quarters of a mile of the intersection of Main and Broadway, in the heart of Oklahoma City's business district, 6⅝-inch casing having been set at 6300 feet, 10 feet above the top of the Detrital zone. At a total depth of 6504 feet in Wilcox sand, the well produced 2436 barrels in one hour. It is being rated at better than 60,000 barrels and 50,000,000 gas.

Operations were at a standstill in the northwest end of the pool during the latter part of the week due to the dangerous gas and oil flow which was being blown over a wide area from Morgan Petroleum Company's Stout 1, which blew wild from Thursday evening, October 30, until Sunday afternoon, November 2.

Empire Oil & Refining Company recovered six inches of hard broken sand with a good show of oil while coring between 6510 and 6520 feet, in its Gustine 1, SW NE Section 1-11n-3w. This test is an east offset to the Slick and Atkinson, T. M. Townsend 1, which was completed as a 9300-barrel well at 6495 feet. General belief is that the Gustine well is on the east side of the fault line or on the line and may not find commercial production. Slick and Atkinson's T. M. Townsend 2, NE SE NW Section 1-11n-3w, northwest offset to the former's Gustine well, is making only 30 barrels a day from 6552 feet.

In the south end of the pool, Continental Oil Company's Sudik 1, NE NW NE Section 6-10n-2w, on the northern boundary of Cleveland County, is making 810 barrels of fluid and cutting three per cent from a total depth of 6771 feet. Same company's Sudik 4, two locations east of No. 2, bailed to bottom at 6760 feet and had nothing showing. Wilcox sand production in this part of the field is well defined and there are evidences that the oil-water contact in the sector is at about the minus 5425 contour.

Mid-Kansas Oil & Gas Company's Messer 1, SW SW SW Section 32-14n-3w, new discovery well in the Edmund area north of Oklahoma City, is producing about 300 barrels daily and cleaning out. Total depth is now 6771 feet. Production from this well has declined from better than 700 barrels.

Complete 500-Barrel Well in McPherson County, Kansas

WICHITA, Kans.—Mid-Kansas Oil & Gas Company's Stephens 1, SW NE Section 33-19s-1w, McPherson County, came in flowing 21 barrels an hour from lime topped at 3407 feet and drilled to 3414 feet. On the swab it produced 235 barrels in one hour and 45 minutes and was then shut in to run 5 3/16-inch casing. The new well offsets an old chat producer which made 130 barrels of oil and 140 barrels of water, initially. It is 2½ miles northeast of the Ritz pool, nearest important chat production, and approximately 12 miles northeast of the Voshell pool, which is the nearest lime production. The Stevens 1 is surrounded by large blocks of acreage held by the Shell Petroleum Corporation, Prairie Oil & Gas Company, Bu-Vi-Bar, and Empire Companies.

Another wildcat test which is attracting considerable attention is the Jasper and Beschla Cupp 1, SW NE, Section 22-18s-9w, about two miles northeast of the J. H. Tadlock et al's Ploog 1, in Rice County. Cupp 1 had 7,500,000 feet of gas between 2010 and 2020 feet which was mudded off and 10-inch casing set below it at 2030 feet. At last report the well was drilling at 3030 feet and operators expected to reach the lime within a short time. It is running at about the same height structurally as Tatlock's Ploog 1, which was completed in August for an initial production of 383 barrels of 48.6 gravity oil in 12 hours from siliceous lime topped at 3252 feet.

The Eastborough pool, east of Wichita in Sedgwick County was extended one location northwest with the completion of E. B. Shawver's Fee 1, SEc SW SE Section 18-27s-2e. Production was found in the chat topped at 2959 feet. Twenty-two wells in the pool are producing approximately 8400 barrels daily and operators are having difficulty in securing connections since the recent cut-off order which was issued by several purchasers. Eastborough is one of the few pools in Kansas which has had no proration agreement and which has been allowed to produce its potential because of the demand for the oil.

The Voshell pool has been producing approximately 8000 barrels from 93 wells and the Ritz pool 5735 barrels from 14 wells. There are five locations, three rigs, and 10 drilling wells in the latter pool.

Carr City Well Estimated at 1000 Barrels

TULSA.—Gypsy Oil Company's Tiger 1, SE SW NW Section 3-8n-5e, Carr City pool, is estimated as a 1000-barrel producer from the Hunton series topped at 3926 feet. Top of the Viola was at 4066 feet and Sylvan shale at 3970 feet. This is the first Hunton production in the pool.

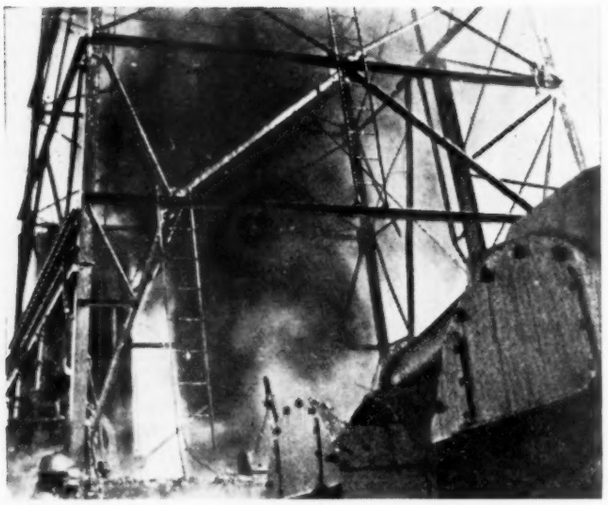
Pipe line runs from the Greater Seminole district for the week ending October 27, averaged 179,142 barrels daily, 130,634 barrels from Seminole, 17,879 barrels from Konawa, and 30,579 barrels from St. Louis, Pearson and Asher.

Recent tank car shipments include Carter Oil Company from its own leases, 2660 barrels of Seminole crude to Imperial Oil & Refining Company, Regina, Saskatchewan, Canada; H. F. Wilcox Oil & Gas Company, from its own leases, 917 barrels of Seminole crude to its plant at Bristow; and Gwin Drilling Company, from its Gregg lease in Seminole, 206 barrels to refinery at Wewoka.

It is reported that Turman Oil Company has terminated its contract with the White Oak Refining Company after the latter had taken only about 90,000 barrels under an agreement which was understood to have included about 350,000 barrels. White Oak Refining Company has been running 2000 barrels daily to its plant at Allen.

Parco Oil Company, Ltd., Formed

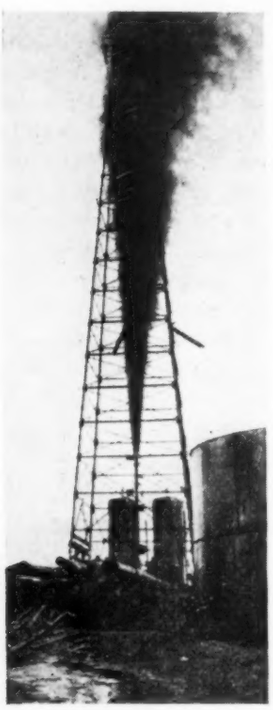
Casper, Wyoming.—Prairie Oil & Gas Company and Producers & Refiners Corporation have recently organized a Canadian subsidiary, with headquarters in Calgary. The new company is to be called Parco Oil Company, Ltd., and Joseph S. Irwin and Hal C. Curran, both formerly of Casper, are to be in charge. Mr. Irwin is a geologist and Mr. Curran is an attorney.



Morgan Petroleum Company's Stout 1 as the die nipple went into the casing

Oklahoma City's Third Gusher Finally Put Under Control

OKLAHOMA CITY—Oklahoma City passed through its most hazardous experience in the role of an oil city last week when Morgan Petroleum Company's C. E. Stout 1, CSW NW Section 2-11n-3w, cut out connections and started blowing wild at an estimated rate of 50,000 barrels of oil and 100,000,000 cubic feet of gas. From Thursday night, when the well blew out, until Sunday afternoon, national guardsmen, city firemen, and members of the sheriff's force maintained a strict guard along the lines bordering the danger zone and many families living within the area were without fires in their homes. Railroad companies running trains through the danger zone were required to cut out fires and pull through the gas filled area on stored up steam pressure. A general air of uneasiness prevailed in Oklahoma City as gas and oil drifted through parts of the residential and business districts, and at times residents in parts of the city were thrown into panic when fires broke out within striking distance of the well. Changing winds had made the area around the well a veritable fire-trap and only the extreme precaution taken by those in charge of the danger lines and the work on the well prevented a disaster which might have left Oklahoma City a mass of smouldering ruins. Firemen were stationed at vantage point on the thrible boards of derricks surrounding the area and kept a close look for fires.

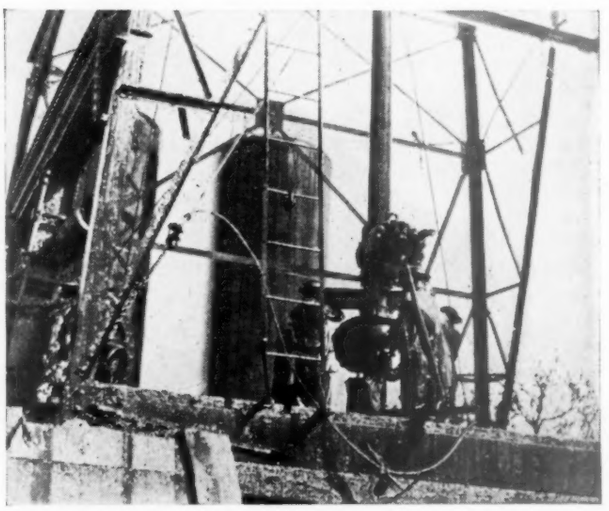


Just before closing the gates

The well was opened for eight minutes late Thursday and flowed 208 barrels. Sand started cutting out the lower master-gate and the top gate was jammed so that it could not be completely closed. In a short time both gates, with the exception of the lower part of the bottom gate, were cut away and flow lines torn to shreds. John Gordon, former connection superintendent for Indian Territory Illuminating Oil Company, directed the work on the derrick floor and W. U. Paul, superintendent for Morgan Petroleum Company, was in charge of the outside work. Rumors that Fred Morgan, organizer and president of the company, had deserted the work of bringing the well under control, were proven entirely false when it was found that he had spent as much time as any other member of the crew on the derrick floor and in the cellar where danger was greatest.

Derrick Floor Cleared

The largest part of the control work was taken up in clearing the derrick floor and removing torn connections so that the die-nipple could be stabbed into place. A nipple forged, machined and assembled by American Iron & Machine Works Company was successful in bringing the wild flow under control. Early Sunday morning, November 2, the well was ready for the nipple with the exception of the lower part of the bottom gate. This was removed in two parts and blown off by the well pressure. The second part blew high into the derrick and knocked out a sway brace. The die was stabbed into the oil string at noon and within a few minutes the crew had bucked it down six turns and the flow was directed through two master-gates and a set of nipples, making the discharge point about 35 feet above the derrick floor. About three hours were required to anchor down the connection. At mid-afternoon the gates were closed and Oklahoma City's third outstanding wild gusher passed into history.



Showing the two high-pressure master gates directly above the die nipple

One control plan went awry when Champlin Oil & Refining Company's Naden 1, south offset to the Stout, started cutting out the upper gate and had to be closed in. Operators had secured permission to open several of the offset wells in the belief that it might reduce the pressure on the Stout well and aid in bringing it under control.

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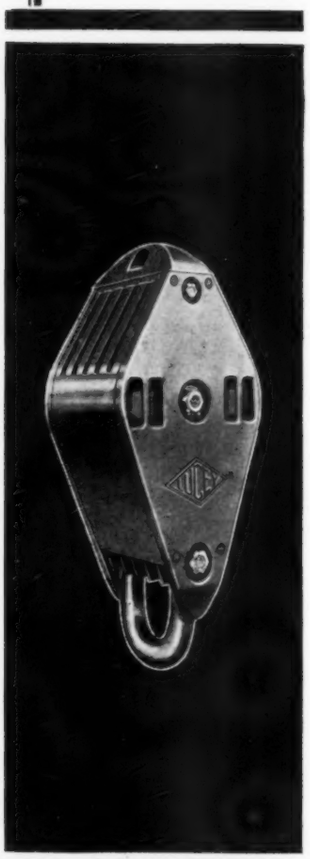

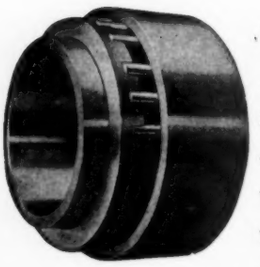

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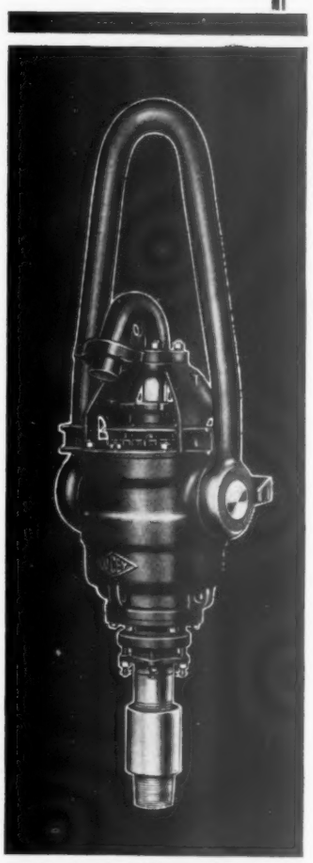

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North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Commission Orders State-Wide Investigation of Gas Waste

FORT WORTH, Texas.—A state-wide investigation of alleged gas waste has been ordered by the Texas Railroad Commission as a sequel to the hearing held at Austin, October 23, in connection with the situation in the Big Lake field. The two operating companies in the Big Lake field were formally ordered on October 31 to shut in the seven record depth wells, keeping same fully closed after November 15, 1930, until a market is provided for the gas, or until wells have been properly tubed.

Testimony presented before the commission at the Big Lake field hearing has resulted in the conservation body issuing instructions to all deputy supervisors of the oil and gas division to make a survey of their respective districts, and report on all known instances that a waste of gas exists. This investigation is expected to result in additional orders being directed by the commission against companies and operators, especially in the Texas Panhandle and in Southwest Texas, where a high ratio of gas is often encountered with oil flow.

The alleged waste of gas in the Big Lake field from the deep wells was brought to the forefront during the course of the hearing held primarily to have the two operating companies give reasons for not curbing their oil production 33 1/3 per cent as ordered by the commission in August. The operators have been reluctant to reduce their oil production below contracted amounts, which involves a premium over similar grades of oil, Humble Oil & Refining Company is the purchaser until April 1, 1940, and is contracted to take and purchase 20,000 barrels daily, if the oil is available from current production, or storage. Testimony given in regard to the deep well situation resulted in the commission then ordering the operators to shut-in or tube the wells to conform with gas waste laws of the state.

The seven deep wells produced 14,417 barrels of 58 gravity oil and approximately 143,971,000 cubic feet of gas, yielding about seven-tenths of a gallon of gasoline per 1000 cubic feet, during the 24-hour period ending 7 a. m. November 3. Three gasoline plants in the field are recovering from 60,000 to 70,000 gallons of gasoline daily from this gas, and also from a limited volume of rich gas produced by 3000-foot wells. Above production figures indicate a ratio of about 9986 cubic feet of gas per barrel of oil brought to the surface under natural flow from depths ranging from 8489 to 8923 feet.

Prior to the commission's order of October 31, the Big Lake Oil Company and Group One Oil Corporation (Continental Oil Company) had purchased tubing to proceed with installation of same in an effort to curb the steady gains in oil and gas production maintained by some of the deep wells in the face of heavy application of back pressure at the surface, Levi Smith, president of the former company, has announced that tubing will arrive from the mill before the close of the present week, and that work will then proceed at once in abiding by the new order.

Tubing Bought

George H. McIntyre, general superintendent Texas-New Mexico operations for Continental Oil Company, has also notified the commission that tubing will reach the field late this week, and that contract has been awarded for the installation of same in University 2-B and 3-B. Experience gained in handling these two deep wells will determine whether the company's University 1-B, discovery well of the 8500-foot horizon, can be safely throttled. The latter

Andrews Wildcat's Prospects Dampened by Sulphur Water

SAN ANGELO, Texas.—Appearance of sulphur water in the southern Andrews County wildcat test of Fuhrman Petroleum Corporation on the Ford ranch in lime at 4612 feet has eliminated this well from flush production possibilities. The well tested two bailers sulphur water per hour, and drilling was halted after reaching a depth of 4614 feet. Oil production during the 24-hour period preceding the water strike amounted to 137 barrels, and is credited with coming from streaks of pay in lime below 4290 feet. Owners plan to plug back and shoot. The well cased off 30,000,000 feet of dry gas in the upper section of the lime.

Progress on the short lived flowing oil well of Cranfill Bothers and Gulf Production Company on the Tubb ranch in western Crane County has been halted by a fishing job at 4488 feet. The high gravity oil production has been practically exhausted but the well is making about 7,000,000 feet of gas daily from the upper horizon.

Cranfill et al's Muir 1, located several miles to the south of the above well, was flowing about 1500 barrels sulphur water at 3700 to 3712 feet. A string of six-inch casing is to be set after drilling about 200 feet below this water horizon.

Shrinkage in production quotas of the Ector County and Howard-Glasscock County areas took place at the beginning of the November proration period. The former field was reduced from 7700 to only 6000 barrels daily largely through reduced nominations by Burford Oil Company, which is the only general purchaser. The Howard-Glasscock districts production allowance decreased 6720 barrels daily, with the output limited to only 26,666 barrels daily during November.

Southern Crude Oil Purchasing Company's discovery well on the Cowden ranch in northern Ector County was restored to active production during the past week, and gauged 341 barrels oil during 24-hour period ending 7 a. m. November 1; 200 barrels on the second day and 222 barrels the third day. During these gauges the well was flowed through 11/64-inch choke. It is producing from lime at 4154-4244 feet, and had been shut in since September 25. In the meantime the company has erected a 55,000-barrel steel tank on its leasehold. A second test is rigging up 660 feet out of the northeast corner of Section 34, block 43, T. 1n, or a short distance southwest of the producer.

well was drilled by former owners of the Group One Oil Corporation, with little expectations of developing production, or a heavy oil and gas producer. The discovery well is cased to 6176 feet with 5 3/16 inch pipe, with open hole from the latter point to 8523 feet. This pipe had been used in drilling of other tests, and is badly worn from drilling line, while cement was used sparingly.

Group One Oil Corporation has contracted with the Southern States Company, Shreveport, to install three-inch tubing in University 2-B, and the contractor will use the H. C. Otis method. This well will be dealt with first, and 8800 feet of Spang, Chalfant & Company, Inc.'s 9.3 pound tubing is enroute. Larger tubing for this well is not deemed practical, since the hole is cased with 7-inch pipe, while the inside diameter is not sufficient to afford proper clearance for collars on four-inch pipe.

A combination string of four and three-inch tubing has been purchased from the above firm for University 3-B, which is cased with 9⅝ inch pipe at 5812 feet, with a total depth of 8633 feet. It is planned to install four-inch, 12¾ pound pipe to the bottom of the cased hole, with three-inch tubing below that point. About 6100 feet of the larger size, and about 2700 feet of three-inch has been purchased.

Considerable interest will be focused on the results of this tubing work, as all of the wells are producing from greater depths than either oil or gas is found elsewhere, and the operators will be pioneering such a task.

Production from the seven deep wells in the Big Lake field for the 24-hour period ending 7 a. m., November 3, is listed below:

Group One Oil Corporation

	Oil Production	Gas Production	Lbs. Back Pressure	Total Depth
University 1-B	2845	23,995,000	165	8523
University 2-B	1912	20,846,000	950	8489
University 3-B	1780	20,239,000	600	8633
Big Lake Oil Company				
University 1-C	1400	10,707,000	450	8668
University 2-C	2322	22,800,000	950	8603
University 3-C	179	1,727,000	400	8923
University 4-C	3979	43,662,000	700	8697

Maverick County Well a Gasser

Eagle Pass, Texas.—Chittim 5 of the Rycade Oil Corporation in eastern Maverick County, Section 129, has been completed at 5572 feet as a gas well with estimated open flow capacity of 12,000,000 cubic feet daily, the rock pressure being 2250 pounds. Production is reported coming from Glen Rose limestone. This gas well, like several others in the same field, will feed into the natural gas system of Texas Gas Utilities Company, supplying Eagle Pass, Del Rio, Uvalde, towns in the Winter Garden district, and various irrigation and other industrial projects. Rycade Oil Corporation's Sullivan 5, Section 82, Maverick County, is fishing at 7092 feet.

Plan to Deepen Kerr County Test

San Antonio.—L. L. Evans' wildcat, Love 1 in the southwestern part of Kerr County in the C. C. S. D. & R. G. N. G. Survey No. 1594, will be drilled deeper although it made three bailers of light green oil at total depth of 2550 feet. The sand thickness was from one to three feet, reports on it varying to that extent.

Plan Mid-Year Meetings for Three Institute Divisions

NEW YORK.—Recommendation of the American Petroleum Institute's divisions of production, refining and marketing that these units hold mid-year meetings at different times and places will be acted upon by the Institute's board of directors, or the executive committee, sometime during the eleventh annual meeting at Chicago November 10 to 13. Approval of the proposal, it is believed, greatly will affect future annual meeting programs by confining them to consideration of broad general subjects and policies of interest to the entire petroleum industry.

At present the annual meeting program is made up largely of meetings of committees active only in detail work affecting their particular branches of the industry and of group sessions for the discussion of technical or semi-technical matters. Under the proposed program, virtually all the detail committee work would be transferred to mid-year meetings, including election of officers, presentation of reports and discussion of present and future activities, thus relieving the congestion of committee business which is becoming increasingly difficult to handle in preparing annual meeting programs.

Typical are the difficulties attending preparation of the program for the annual meeting this year. More than 70 different committee meetings are to be held. While the official opening date is November 11, a number of committees have been forced to meet in advance, some as early as November 3. For at least 30 committees it has been impossible to assign definite hours, with the result that they will be in session late at night, early in the morning, at luncheons and even after the annual meeting officially has closed. Moreover, because of the numerous meetings of committees and divisions, each attracting only a comparatively few of the thousands of oil men present, it has been possible to schedule only two general sessions in which all can participate. One of these is on the afternoon of the opening day, the other in connection with the annual banquet the evening of the closing day.

It is believed that the holding of three separate mid-year meetings would be universally welcomed by the industry. Division members, meeting at different times and places, would be able to give full time to discussion of subjects in which particularly they are interested. This plan also would make possible further development of divisional activities on a nationwide scale and provide ample opportunity for consideration of the host of technical and other problems affecting the many and various sections in which, and conditions under which, the three branches of the industry function.

Karnes County Wildcat Deepening

Houston.—Fort Bend Oil Company's Newberry 1, Karnes County wildcat in the Pettus district, was pulling screen to deepen early this week from the depth of 2976 feet. Tubing had been lowered near bottom and was swabbed dry, and then tubing was pulled and the casing swabbed dry, with no oil or gas showing. This well had formerly given indication of developing commercial production. It is located in the Carlos Martinez Survey.

EAST CENTRAL TEXAS FIELDS

Tests Drilling Near Joiner Well Reach Interesting Depths

TYLER, Texas.—Tests drilling in close vicinity of C. M. Joiner and associates' wildcat oil producer in northwestern Rusk County were approaching the expected oil horizon early this week, and an early showdown as to the importance of this new Woodbine sand area is now assured. One half dozen tests, located in all directions from the discovery well, had drilled past the 2000-foot level early this week. Arkansas Fuel Oil Company's J. A. Worrell 1, located about one-half mile southeast of the producer, cored broken chalk at 3530 to 3547 feet and at 3548 feet reported slight oil saturation in sand. Coring is to be resumed and if formations are favorable, will cement casing. Other tests trailing at lesser depths are making equally as good drilling time, thereby indicating that fast development is possible in the event attractive production follows.

Arkansas Fuel Oil Company is drilling in the southwest corner of the Worrell 38-acre lease, and is credited with having logged Pecan chalk at 2490 to 2510 feet, with broken chalk continuing to below 2900 feet. First Austin chalk was encountered at 3439 feet, with a surface elevation of 412 feet. Although chalk data on the discovery well is of a doubtful nature, it is generally conceded that the Worrell test is running low on structure. Arkansas Fuel Oil Company is the only major company taking actual part in the development of the Joiner area at present, and it is understood that this company is aiming at a crude supply for its recently acquired refinery at Shreveport, if the oil is available in quantities that would justify a direct pipe line to the latter city. L. L. Smith et al's W. H. Worrell 1 was drilling below 2800 feet early this week after encountering broken Pecan at 2338 feet and hard Pecan chalk at 2553-2722 feet, with a surface elevation of 424 feet. The other active tests had not reached this chalk horizon on November 3.

Reconditioning work on Joiner et al's discovery well on the Daisy Bradford farm was continued during the past week. During the 24-hour period ending 7 a. m. November 3 this well swabbed and flowed 160 barrels 38 gravity oil from Woodbine at 3536-3592 feet, as compared to a yield of 248 barrels the previous day. The well has averaged about 125 barrels oil daily since its completion on the night of October 3. Fuel oil sales to nearby rigs is the only available market.

H. L. Hunt and others are fortified with a new four-inch line that has been completed from their drilling test on the Daisy Bradford farm to the nearest point on the I. & G. N. branch railroad, a distance of about three miles. Construction of a tank car rack has been deferred until production is obtained, but these operators propose to provide a prompt market for any oil produced in excess of local fuel oil sales.

Voluntary receivership of the Rusk County discovery well and about 500 acres of nearby acreage was granted in Dallas October 31 by District Judge Towne Young upon the plea of C. M. Joiner. Owners of about 100 certificates, issued for sums ranging from $100 to $500 by Joiner to finance the drilling, had applied for the receivership, and cross action was taken by the discoverer of the pool. Ernest R. Tennant, Dallas banker, was appointed receiver. Land and lease titles in the Joiner area will require many lawsuits to establish ownership, and faulty titles have blocked a number of deals, including a proposition that involved the discovery well and lease.

Meet Unfavorable Conditions

Unfavorable structural conditions have been logged by Texas-State Oil Company-R. H. Dearing et al's wildcat on the T. H. Skinner 20-acre tract, located north of Athens in Henderson County. This test was supported by excellent surface geology and geophysical data, but logged Pecan chalk at 2500-2603 feet, with a surface elevation of 453 feet, and is now considered out of the picture. Early this week it was drilling in Taylor marl at 3310 feet. It will be carried to the Woodbine sand horizon, or 5000 feet, as dry hole contributions require same.

Revised potential production on all wells in the Van field at the close of October revealed an actual output of 299,333 barrels daily through 11/16-inch choke from 143 flowing and seven pumping wells. These 150 producers will be allowed to produce 27,333 barrels daily during the November 1-15 proration period, or an average of about 182 barrels daily each. Included in the above figures is the data on 20 completed wells outside the Van 5800-acre unit.

Five new wells were added to the field during the past week, including a surprise completion on the south end of production, while unfavorable developments also cropped out. Pure Oil Company's D. O. Mayo 1, J. Prado Survey, furnished a slight extension to the lower end of the field by gauging 2832 barrels daily, based on three-hour proration test through 11/16-inch choke from regular sand at 2785-2951 feet. In the north portion of the field, Pure Oil Company's J. F. Crim 1, 40-acre lease, pumped only three barrels per hour after several weeks of conditioning work on the hole, which is bottomed at 2981 feet. In the same area Pure Oil Company's W. F. Swain 2 failed to yield oil production when given a swabbing test in Woodbine at 2924 feet, but gauged 909,000 cubic feet of gas daily. Pure Oil Company's A. G. Tunnell (50-acre) 1, an outpost location to the north of the productive area, was preparing to make drill stem test early this week at 3013 feet, with little promise of making a producer.

First Year of Van Unitization Plan Completed

TYLER, Texas.—First anniversary of the unitization of the Van field occurred November 1, and this date also marked the termination of Pure Oil Company's contract with other unit members to take 25,000 barrels of oil daily at Mid-Continent prices. However, the company is gathering and running the oil as heretofore, pending the completion of Humble Pipe Line Company's 10-inch carrier, which will take on surplus lease connections now held by Pure-Van Pipe Line Company and also provide a market for an increased proration quota for the entire field. This new line will be completed, and handling oil by December. Pure Oil Company has been forced to store a large volume of Van crude during the past few months as result of its contract with unit members, and effective October 27, adopted the reduced Mid-Continent prices that were previously announced by other companies. Under the new schedule Van crude is quoted at about 95 cents per barrel at the well.

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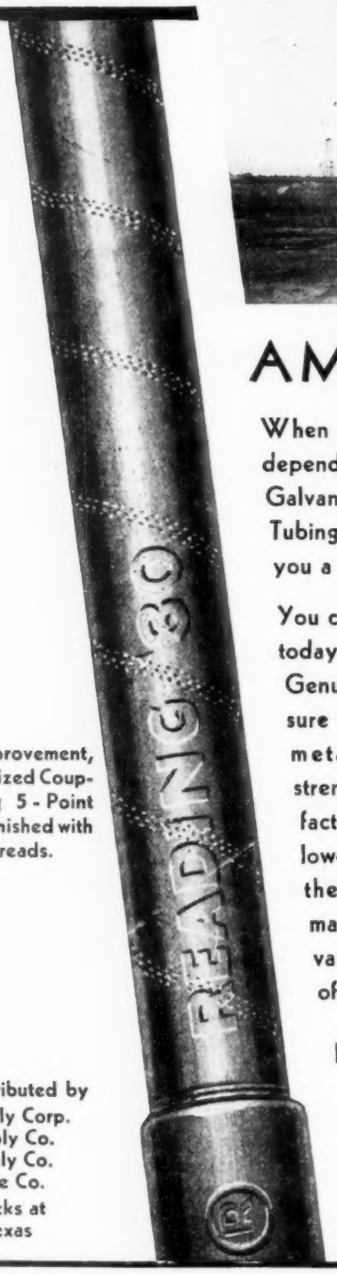

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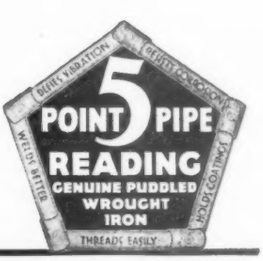

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New Mexico and Rocky Mountain Area

Hobbs Allowable Is Reduced to 31,300 Barrels Daily

HOBBS, New Mexico.—Potential production of the Hobbs field was rated at 901,255 barrels daily from 114 flowing and a few pumping wells in the 4200-foot lime horizon at the close of October. Completions assured for the field during the next two months will boost the potential to the 1,000,000-barrel mark by the end of the current year, but gains in potential after December will be comparatively small, as the 74-cent price now applying to the crude, which averages 36 gravity, discourages new development. The production allowance has taken a steady drop during the past four proration periods, and during the November 1-15 period the output will be limited to 31,300 barrels daily, or 3.47 per cent of the estimated potential. This allowance permits an average production of 274.56 barrels daily per well. Such a quota offers a slow return under the new price schedule on wells that cost an average of $80,000 to complete.

Oil drainage given the field is not reflecting in new wells added, as the eight completions made during the last half of October contributed a combined potential of 82,072 barrels or an average of 10,258 barrels each. Absence of water in the oil horizon has been particularly noticeable in this field, as most of the lime fields of the same general type across the border in West Texas experienced water troubles at early stages of development, with steady increases thereafter. Close adherence to proration by all operators is credited with holding off the water encroachment at Hobbs.

Crude purchasers at Hobbs are sticking by their original nominations made at the beginning of proration on July 10, but the shrinkage in outlet for the field has continued for the reason that companies taking their own production through private transportation arrangements fail to maintain their former production quotas. The Texas Company, Tidal Oil Company and Gypsy Oil Company do not nominate, but take their own production, and each have been earning smaller production quotas lately.

Shell Petroleum Corporation continues to lead the list on production, and during the November 1-15 period earned a production quota of 4540 barrels daily from 17 wells that were credited with a combined average potential of 132,641 barrels daily, including one unit that has three wells on same. Amerada Petroleum Corporation drew second place, with an allowance of 3308 barrels from nine flowing wells rated at 102,351 barrels daily potential. Humble Oil & Refining Company was allotted a production quota of 3234 barrels from nine wells, which were credited with a combined potential of 102,449 barrels daily, including one unit that has two wells on same. The latter company is also a half owner with Kirby Petroleum Company on one well, that is allowed to produce 518 barrels daily after increasing potential from 7128 to 17,237 barrels daily when given a regauge late in October. The gain in potential by this well is believed to be due to it not being cleaned of rotary fluid when the October 15 gauge was taken.

Activity Declines

Only 19 active tests, and four others rigging up were credited to the Hobbs field early this week. Due to pressure used by offset lease owners, Humble Oil & Refining Company has temporarily abandoned derrick on its Bowers 11-A. This particular location would have necessitated the drilling of a total of six wells.

This lull in activity at Hobbs is being followed by increased activity in the Eunice pool, Lea County, where four flowing wells have been completed over a wide area in the 4000-foot lime. Atlantic Oil Producing Company has awarded drilling contract to Grady Vaughn, and rigging up rotary to drill O. L. Coleman 1 in the north 80-acre of the NW¼ Section 17-21s-36e. Shell Petroleum Corporation is drilling below 400 feet on its Coleman 1, a south offset to Tidal Oil Company's 900-barrel flowing well on the Coleman land. Continental Oil Company and The California Company are rigging up rotary on A. E. Meyer-Government permit number 2 to offset the above producer to the west, and the same interests are digging cellar to drill in the SEc Section 18-21s-36e, to offset Geo. F. Getty Oil Company's producer on state fee. Tidal Oil Company is obligated to start a test before close of December in the NE¼ Section 8-21s-36e as part of the purchase price for a half interest in the tract that is owned jointly with Devonian Oil Company. In the event successful completions are made by this new field work four to six other tests will be required.

Geo. F. Getty Oil Company has contracted to sell the entire output of its single producer in the Eunice pool to Tidal Refining Company during November and December, with the latter concern having option to take the oil until June 30, 1931. The Texas Pipe Line Company connected to the well and began running oil from storage tanks November 1, and will handle the crude on a common carrier basis for Tidal Refining Company. This crude contract involves a deferred payment plan that will not involve a price sacrifice on the part of the producer should Lea County crude prices remain at the prevailing level.

Greasewood Discovery Well Shows Production Increase

Denver, Colo.—Discovery well on Greasewood dome, in Weld County, northern Colorado, has increased its production to 200 barrels per day from its original total depth at 6667 feet. Platte Valley Petroleum Company is preparing to drill it into the Dakota sand expected within 50 to 60 feet.

The well came in October 10, at 6667 feet, and has been flowing by heads at four-hour intervals since. Oil supposed to be coming from the Benton shale has a gravity of 42 degrees. Temporary arrangements are made by Platte Valley Petroleum Company with Continental Oil Company to take the crude until a permanent contract with some operator is concluded. Continental Oil Company has two

tank trucks running 24 hours per day between the well and Orchard, a station on the Union Pacific. Company has two 500-barrel tanks built and one gun-barrel tank; a 5000-barrel tank is being completed.

It is reported that high prices are being paid by lease men for various major operators in the region of the discovery. There are no new locations announced, but Platte Valley Petroleum Company has stated that it will drill another test a quarter mile north of the discovery.

Montana Power Favored in Request for Gas Franchise

Butte, Mont.—The contest of Montana Power Company and Ohio Oil Company for franchises to supply gas to cities in Southwestern Montana would appear to have been won by the former company. In Bozeman, the power company's request is to be voted on first, and in Livingston the city council gave preference to that company. It is controlled by Electric Bond & Share Company, which last year distributed more gas than any other utility company in the world.

Attorney for the company told the Livingston meeting that his company had contracted with Anaconda Copper Mining Company for the delivery of 30,000,000 cubic feet of gas per day to the smelters at Butte and Anaconda, and that it was estimated that an additional 25,000,000 cubic feet would be required to serve the domestic consumers in Butte, Anaconda, Bozeman, Livingston and Deer Lodge. The company already has a franchise in Helena. The contract granted in Livingston requires that the company show by the coming December a gas reserve sufficient to supply 50,000,000 feet per day for the next 15 years. Montana Power Company says that it already has one gas well, and options which will insure a gas reserve by the time the pipe lines and distributing plants are ready. Representatives said that within a radius of 250 miles from Cut Bank, Montana, there is more gas than will be needed for decades to come.

"There is enough gas burned north of Columbus in making carbon black to last Livingston and Bozeman for many years," he said.

Pipe line would be 250 miles long, require 62,500 tons of pipe, and would cost about $15,000,000.

Title and Claims Suit Filed

Cheyenne, Wyoming.—John Barnhard, Hattie D. Patchen, Edward Barnhard, and Ola B. Thompson have filed suit here against Midwest Refining Company and The Texas Company. The action is brought to quiet title and ask the defendant companies be restrained from setting up any right, title, or interest in the properties which are located on Midway-Geary anticline, newly discovered oil field 12 miles north of Casper.

Market for Billy Creek Gas Effected

Casper, Wyo.—Gas from two wells in the Billy Creek gas field, Johnson County, Wyoming, have been turned into the gas mains of Minnesota Northern Power Company, of Minneapolis, which, through its subsidiary, Northwest States Utilities Company, is supplying the towns of Buffalo and Sheridan with natural gas. Wells in Billy Creek are owned jointly by the Consolidated Royalty Oil Company, Western Exploration Company and Carter Oil Company.

Use Diesel on Mills River Test

Great Falls, Mont.—W. M. Fulton is installing a 90-h.p. six-cylinder Fairbanks-Morse Diesel engine at the test on Milk River structure, in the Glacier Park area, for use as power at the test which drilled into a very good showing of gas at 800 feet a short time ago. The operation is to be continued during the severe winter weather and Mr. Fulton states that his experience at the Garmesa dome in Colorado has demonstrated to him the effectiveness and economy of operation of the engine he is now installing at Milk River.

Shut in Black Oil in Wyoming

Fields—County—	Barrels
Bolton Creek—Natrona	100
Notches Dome—Natrona	350
North Casper—Natrona	200
Black Mountain—Hot Springs	750
Grass Creek—Hot Springs	4,000
Maverick Springs—Fremont	6,000
Mule Creek—Niobrara	350
Oregon Basin—Park	9,000
Byron—Big Horn	5,000

Bautch Gets Gas Rights

Lusk, Wyoming.—C. F. Bautch of this town has been granted a certificate of convenience and necessity to pipe natural gas from the Lance Creek field, north of here, to this town. D. B. Cogswell and A. J. Hardedorf of Denver have applied for a similar franchise. Bautch's original plans called for the utilization of an oil line operated by Ohio Oil Company between the Lance Creek field and Lusk. However, since the former has secured oil in its deep test in the field, it is quite probable that a new line will be laid for gas.

New Gas Field on Powder River

Casper, Wyoming.—A new gas field has been proved by Cuyler Oil Company on Powder River structure 40 miles northwest of Casper. A gauge of the gas showed it to be more than 10,000,000 feet with a rock pressure of 530 pounds per square inch. Total depth of the well is 1320 feet, and the well is to be completed as a gasser. A new location for another well to be drilled to the gas sand is made one-half mile north of the discovery. A third well is to be drilled to the possible oil producing sands in lower horizons.

Midwest Plans Geary Dome Test

Casper, Wyoming.—A 124-foot steel derrick is being erected on Geary Dome by the Midwest Refining Company and its associated interests for a test to be drilled, by rotary, there this winter. Gas and water lines are laid to the location, and several small storage tanks are up. Contract is let to the Olson Drilling Company of Tulsa, the concern which drilled the Midway dome discovery well, on the same anticline, to the producing sand in record time.

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Gulf Coast and South Texas Fields

JACK LOGAN, *Staff Representative, Houston, Texas*

New Wells Boost Darst Creek Production 2000 Barrels

SEGUIN, Texas.—Several new producers were completed during the past week in the Darst Creek field, Guadalupe County, increasing the field's potential daily output by more than 2000 barrels. The Texas Company's Posey-Baker 7 was completed for 1300 barrels daily on the pump at 2605 feet, and its Wiley-Schmidt 2 on the southwest end of the field was a 200-barrel producer at 2600 feet. Magnolia Petroleum Company's Klein 3 commenced pumping 500 barrels daily at 2533 feet. Gulf Production Company's Posey-Baker 9 had initial production of 720 barrels, and Humble Oil & Refining Company's Denman 18-A came in for 850 barrels daily at 2592 feet.

Approximately half a dozen wells are drilling at Darst Creek, the most active operator being Magnolia Petroleum Company. That company's Rand Miller 5 late last week was being completed at 2625 feet; Thomas Dix 13 was drilling at 1500 feet; Thomas Dix 14 was drilling at 690 feet; Klein 4 was drilling at 1260 feet; and Rand Miller 6 was drilling at 300 feet. Humble Oil & Refining Company at the same time was preparing to complete Sallie Wilson 7, total depth of which was 2605 feet.

Pettus' Potential on Official Gauge Shows 11,408 Barrels

HOUSTON. — The Pettus townsite oil pool, Bee County, on recent official proration gauges showed daily potential of 11,408 barrels from 15 wells, an average per well of approximately 760 barrels. Union Producing Company's Ray 15 and Ray 20, with potentials of 1060 barrels and 1176 barrels, respectively, were the only wells showing more than 1000 barrels daily capacity. On the other hand, only two wells showed less than 500 barrels potential, namely, Buchanan et al's No. 1, Block 38, rated at 402 barrels daily, and Houston Oil Company's No. 1, Block 23 with 372 barrels potential. All wells were gauged on five-eighths inch chokes for six hours, the potential being based on the final three hours of the gauge.

The total daily allowance for this pool has been placed at 4500 barrels, which represents approximately 39 per cent of the field's gauged potential.

There are seven gas wells in the district that are shut in awaiting market outlet, and there are also three unclassified wells, making a total of 25 townsite producers.

The gauging of wells for a new proration schedule was limited to the townsite pool, the Cosden pool to the west and the Ray-McKinney pool to the east continuing under former schedules. The Cosden pool has an allowance of 1200 barrels daily from six wells, and the Ray-McKinney pool has nine wells with allowance of 300 barrels daily each, or a total of 2700 barrels.

The potentials of the townsite wells as shown by the recent gauges were as follows:

Well—	Daily Potential
C. R. & M. Company, Block 34	887
Humble Oil & Refining Company, McKinney 6	940
Union Producing Company, Ray 15	1,060
Union Producing Company, Ray 18	787
Union Producing Company, Ray 19	525
Union Producing Company, Ray 20	1,176
Buchanan et al, Block 20	744
Buchanan et al, Block 38	402
Houston Oil Company, Block 35	589
Houston Oil Company, Block 36	960
Houston Oil Company, Block 23	372
Humble Oil & Refining Company, McKinney 7	620
S. R. C. Oil Company, Block 37	678
C. R. & M. Company, Block 22	903
Humble Oil & Refining Company, McKinney 5	765
Total, 15 wells	11,408

Roma Structure Test Promising

Houston.—The Texas Company early this week made two drill stem tests in its V. Guerra 5-A on the Roma structure, Starr County, testing a hard sand at total depth of 3672 feet. The first test showed seven joints of mud, oil and gas, and practically the same results were obtained in the second test.

This well is about one-half mile south and slightly east of the same company's V. Guerra 4-A, which was completed nearly a year ago, and which is still pumping around 25 barrels daily, nearly as much as when it was first placed on production. Like that producer, the only one as yet finished in the field, the present test is on the west edge of the surface structure. The sand which has just been tested is the same as the producing sand of the other well, but is a little deeper; and a slightly greater thickness of sand has been penetrated in No. 5-A. The oil sand is regarded by The Texas Company as the lower portion of the Cook Mountain or possibly Mount Selman. Aside from the present test and the above mentioned oil producer, The Texas Company has drilled four other tests at Roma, all classed as dry holes, although they had showings of gas.

Hull Field Gets Three New Wells

Houston.—Three producing wells were completed during the past week in the Hull field, Liberty County. The Texas Company's Barrow Fee 3 came in flowing 1000 barrels of 38.5 gravity oil daily through drill pipe and restrained with a there-eights inch choke after 220 feet of screen had been set at 4110 feet.

Empire Gas & Fuel Company's Barngrover 33 came in at 4150 feet flowing 350 barrels of oil daily, and Houston Production Company's Barngrover 15 after being drilled deeper, came in flowing 250 barrels daily at 3880 feet.

Shell Has 1050 Barrels Daily in White Castle Field

Houston.—Shell Petroleum Corporation at present has approximately 1050 barrels daily production in the White Castle field, Iberville Parish, Louisiana, all from two wells, Wilbert 3 and Wilbert 4. The company discovered the dome by seismograph in 1927, and it owns leases covering the whole field.

Wilbert 3 was the discovery well, and during a 24-hour period early this week, 13 months following completion, it flowed 172 barrels of oil and 218 barrels of salt water, showing flow pressure of 171 pounds. Wilbert 3 is on the southwest side of the dome. It is 5836 feet deep, and is yielding 21 gravity oil.

Wilbert 4, the other producing well, during a 24-hour period early this week flowed 887 barrels pipe line oil through a 5/16-inch choke, showing tubing pressure of 625 pounds. It is on the southeast flank of the dome, being about one mile from Wilbert 3. It has been yielding pipe line oil since completion on May 22, 1930. The production is 24 gravity oil, and is coming from sand at 5155 to 5175 feet.

Shell Petroleum Corporation is now drilling another well, Wilbert 5, at White Castle. On November 3 it was drilling hard sandy lime at 4303 feet.

Black Bayou Dome Now Has Five Producing Wells

HOUSTON.—Shell Petroleum Corporation, discoverer and sole operator of the Black Bayou salt dome field, Cameron Parish, Louisiana, now has five producing oil wells in that field, three flowing and two pumping, Their combined production according to a daily report the early part of this week was 925 barrels. The two pumping wells are around 980 feet deep, and the flowing wells are producing from two or possibly three sands ranging in depth from 4382 to 5213 feet. All these producing wells are on the south side of the dome.

Watkins 15 and Black Bayou State 1 are the newest wells in the field, having been completed late in October. Watkins 15, producing from a sand at 4382 to 4402 feet, during a 24-hour period early this week flowed 241 barrels of 21.8 gravity oil and 64 barrels of salt water through a 7/32 inch choke, registering tubing pressure of 380 pounds. Black Bayou State 1 flowed 438 barrels pipe line oil through a 7/32-inch choke during the same period, with tubing pressure of 600 pounds. Its production is from sand logged from 5118 to 5200 feet, and the oil tests around 25.5 corrected gravity. Watkins 12, the other deep producer, flowed 220 barrels of oil and 238 barrels salt water through a 7/32-inch choke, with tubing pressure of 350 pounds. That well is 5213 feet deep and has been flowing steadily since May 18, 1930.

Watkins 9 and Watkins 10 are the two pumping wells. They are yielding crude oil which tests around 19.5 gravity, and both are 980 feet deep. No. 9 is pumping 10 barrels daily and No. 10 is pumping 16 barrels. No. 9 was the discovery well of the field. It came in about April 25, 1929, swabbing 30 barrels daily.

Aside from the above wells, Shell Petroleum Corporation has completed one other producing well at Black Bayou: Watkins 6 on the north side of the dome. That well, however, is no longer producnig. It came in originally flowing 475 barrels fluid, 25 per cent 28 gravity oil daily from sandy shale at 4727 feet.

Shell Petroleum Corporation has made locations for two new wells on the south flank of the dome. That of Watkins 16 is to be 1590 feet west of the east line and 1610 feet south of the north line of the northeast quarter of Section 18-12s-12w, and the location of Black Bayou State 2 will be 1345 feet west and 1565 feet south of the northeast corner of Section 18-12s-12w. The company has been operating two rigs in the field in the past, and will continue the same amount of activity.

Several months ago Yount-Lee Oil Company acquired the fee ownership of the Watkins lands, and through that purchase it controls the fee on all lands covering the dome with the exception of the bed of Black Bayou, owned by the State of Louisiana.

Aside from its oil potentialities, this dome has possibilities for commercial sulphur production, and it is being tested at present by Freeport Sulphur Company, which has the sulphur rights. That company by now has drilled five wells into the cap rock.

Duval Wildcat Flowing 200 Barrels

Houston. — Duval County Ranch Company 1 jointly owned wildcat producer of S. R. C. Oil Company and Vacuum Oil Company in northwestern Duval County, is still flowing around 200 barrels of oil daily, pinched in. The production is being handled through the new eight-mile four-inch pipe line which Magnolia Pipe Line Company recently built between the well and the Schoolfield-O'Byrne pool.

The above interests' second test of the area, Duval County Ranch Company 2, located 575 feet west and 600 feet south of No. 1, is being delayed for erection of a new derrick, the original derrick having been pulled in recently. Total depth of the hole is 1906 feet, with hard sand rock at that level. No showings have yet been encountered in this second well, although it has already exceeded the depth from which the first well is producing. No. 1 is yielding 20.6 corrected gravity from sand at 1730-1736 feet.

Second Bexar County Test Progressing

San Antonio, Texas.—Drilling has progressed below 750 feet on a second test for the shallow oil pool uncovered in southeastern Bexar County last month at a shallow depth through a unit plan arrangement. Penn Oil Company and five associated companies and individuals completed E. H. Cooksey 1 on October 19 pumping 30 barrels 39.5 gravity oil during first 18 hours from Taylor marl at 1401-60 feet, and this well is maintaining a steady output of 40 barrels daily. The second test is known as Kosub 1, located about 1800 feet east of the discovery well, or 700 feet north and 600 feet east of the northeast corner of the Cooksey 70-acre tract, J. W. Riall survey No. 11. A barbecue and celebration staged at the discovery well by citizens of the community on October 19 was marred by an accidental firing of oil in the slush pit. The well equipment was damaged somewhat by the flames.

Brazoria County Tests Drilling

Houston.—The Texas Company is drilling ahead in both of its Brazoria County wildcats, O. F. Ewing 1, 1½ miles north of Manvel, and J. H. Murdock 1 at Fresno. Ewing 1 early this week was drilling sand and shale at 7394 feet, and Murdock 1 was drilling sand and shale at 5025 feet. Both of these wildcats are on torsion balance prospects.

Louisiana--Arkansas Field Notes

Two Tests Below Blossom Hold Promise at Zwolle

SHREVEPORT.—Two tests below the Blossom sand several miles south and southwest of Zwolle, Sabine Parish, Louisiana, which have shown indications of making gas producers, held the major attention of this territory during the week ending November 2. Both tests are below 4000 feet.

Toteco Oil Company's Louisiana Long Leaf 1, NE NW Section 18-6-12, nine miles south of Zwolle production, which created interest last summer when a gas blowout occurred at total depth of 4077 feet, later losing returns and then having drill stem stuck, has cleaned out hole and set 6⅝-inch casing at a depth of 3965 feet. The formation has been identified as a broken sandy lime, and while salt water appeared after drill stem was hung, it was not believed it was coming from the bottom of the hole. Drilling in started at the test, Monday, November 3.

More than eight miles west of this test and six miles south and west of production in the West Zwolle (Blue Lake) field, Loring Oil Company's Nona Mills Lumber Company 1, in the James Mason survey of Sabine County, Texas, tested 1,000,000 feet of gas through drill stem at total depth of 4200 feet and set nine-inch OD casing at 4170 feet.

The producing part of the Zwolle field in the chalk rock from 2100 to 2400 feet, located in the Zwolle townsite, was extended 700 feet south by R. L. Gay, Trustee's, Peterson 1, Block 16, Section 31-8-12, which was heading at an estimated rate of 200 barrels of clean oil Monday, November 3, at total depth of 2400 feet, after swab was run earlier in the day. The well standing with 2000 feet of oil in the hole, refused to flow and 2½-inch tubing with packer was run Saturday, November 1. Six and five-eighths-inch casing was set at 2148 feet, chalk having been topped at 2165 feet, Zwolle marl having been encountered 10 feet above that depth. It was the first flowing well in the Zwolle townsite in several months.

Another development of the week was entry of Prairie Oil & Gas Company into this territory with formal location of the first of two 5000-foot tests to be drilled on a 75,000-acre tract in northeast Claiborne Parish, secured by that company some time ago from the late T. B. Slick. The new test is Shackleford 1, NW SE NE Section 30-23-5w. Louisiana Oil Refining Corporation also plans a 4500-foot test in Section 19-21-7w, on a location to be announced later.

Standard Pipe Line Company of Louisiana has tied into Ohio Oil Company's Pumphrey 4, Section 12-17-14, Champagnolle district, Union County, completed recently as a flowing well in the southeast part of the field as the first flowing well there in several months. The well on the first 24-hour gauge showed 1110 barrels production, seven per cent salt water.

Negotiations are under way for the purchase of the Sun Oil Company's holdings in El Dorado and Smackover by Lion Oil Refining Company for a reported consideration of approximately $400,000. Sun Oil Company has a daily yield of 600 to 700 barrels.

Abandon Bellevue Test

Harry I. Morgan and Shreveport-El Dorado Pipe Line Company having encountered salt water in another test to the upper Trinity on the southwest flank of the shallow Bellevue field, in Bossier Parish, have abandoned Weatherbee B-6, Section 22-19-11, and spudded in Kendricks B-10, NE SW Section 22-19-11. Weatherbee B-6 was salt water at total depth of 1974 feet. Autrey Oil Company, in the same area, went to 2802 feet in McDade 1, Section 28-19-11, before abandoning the test as a dry hole. Louisiana Oil Refining Corporation whipped stock in Bodcaw B-13, Section 11-19-11, at 1750 feet and is drilling at 1790 feet with old total depth of 2028 feet.

Two wildcat tests just north of the Shreveport city limits were started during the week. Hunter Land & Investment Company's Fee 1, Section 32-18-14, having been spudded and at last reports was drilling rock at 934 feet. Rambaugh and associates have rig up for Allison 1, Section 10-19-13, both being in Caddo Parish.

Two tests, one northeast and one southwest of the Holly field of De Soto Parish, have derricks up, the former being Standard Oil Company's Dowling Brothers B-1, SW SW Section 32-14-13, and the latter being Neff and associates' Dowling 1, SE SE Section 18-13-14. Seven new locations were made in the Richland gas field. Seip and associates have spudded in Fowler 1, Section 10-10-10e, Tensas Parish, Central East Louisiana, and are drilling below 300 feet.

Cosden Oil Company, after fishing for tools for several weeks in Donithan Lumber Company 1, Section 19-9n-10w, Cleburne County, Arkansas, finally had to junk the well in black slate at total depth of 4360 feet. Donnell and associates drilling Fee 1, Section 33-11-9, in the same county, have a fishing job for bailer on bottom at total depth of 3640 feet.

J. E. Crosbie, Incorporated, and associates' G. L. Murphy 1, Section 13-16-16, Union County, Arkansas, three-fourths of a mile southwest of Smackover production, is standing with 800 feet of 20.6 gravity oil in the hole and is being standardized, 6⅝-inch casing having been set at 2735 feet with sand from 2738 to 2740 feet.

Graves and associates are also standardizing Walter, Trustee 1, SW SW Section 9-14-18, six miles north of the small Mount Holly field of Ouachita County, Arkansas, after 6⅝-inch casing was set at 1845 feet. A sandy shale showing oil was cored from 1869 to 1873 feet, total depth being 1873 feet.

Arkansas Louisiana Pipe Line Company has derrick up for Jno. Jansen 1, NE NE Section 35-8-24w, Logan County, Arkansas. Marine Oil Company has derrick up for W. B. Thompson A-5, SW NE Section 10-18-13, Urbana district, Union County. H. L. Hunt, Incorporated, is reworking J. E. Trammell 1, SW NW Section 28-18-12, a Union County wildcat, is coring at 4052 feet after resuming operations at 3886 feet.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Upper Zone of Playa del Rey Increases Production

LOS ANGELES.—Concentration on the upper zone at Playa del Rey has sent production upward during the past few weeks, and with a large number of wells scheduled for completion the field peak should be reached within 30 days. The shallow zone is gaining favor and the change of plans to test this sand first should result in a quicker climax to townlot activities than could be expected where the deep zone was the chief objective.

Both the probable time of the peak flow and its size are matters of wide speculation, with the townlot operators, themselves, differing widely from conservative geologists in opinions held. Small operators who are rushing their wells to completion on whatever funds they are able to secure naturally radiate a more optimistic spirit than the larger operators who are watching the townlot activity from the distance. Of course, the companies that are not active in the field are more inclined to doubt the wisdom of a townlot play than the one-well operators who are actually participating, but some medium between the pessimistic attitude of the former and the cock-sure stand of the latter probably would reflect the true status of development.

The temporary shift to the upper zone may prove to be the turning point for the field. Whether this sand will make for a smaller production and faster decline than would otherwise be recorded remains to be seen, but there is a feeling that this shallow zone will ultimately improve the status of the field. Initial production of completions is small, when compared with the first producers in large Los Angeles basin fields, but a large number of shallow producers might have a slower decline than the same number in the deeper zone.

A decrease in deep zone production is accompanying the rise of the shallow sand. The ease with which the upper zone may be reached and difference in cost of drilling make it the choice over the deeper formation. Several of the most recent completions included more than 1000 feet of zone below the final shutoff, whereas the first shallow completions were content to include less than half of this amount.

Civic leaders in the vicinity of development are making an effort to curtail a type of speculation which is injuring legitimate development within the field. Promoters are accepting small amounts from individuals who are anxious to double or treble their money, but who are financially unable to stand the losses which they probably will incur. Instances have been brought to the attention of operators in the field where sums as small as $20 have been invested by youths. The promoters are well within the law, and in many instances are raising money to drill on lots within the proven limits of the field. This fact makes the proposition look very attractive to individuals who have been unable to invest in oil lands on a larger scale. The chances for and against obtaining production probably are about equal, but there is every indication that only a small percentage of the wells started in the townlot district will prove profitable. The fact that they are completed as commercial producers does not mean that they will return a fabulous profit to the original investor. It is true that the first completions even in the townlot district will pay out, but the great bunch of wells which bring up the rear vanguard of townlot development are doomed before they are started.

Difficulties of "Promoters"

Many small "overnight" companies are reported to be in distress and several wells are idle. The casualty list is not yet high enough to bring forth a loud series of wails from stockholders, but when the shutting down movement starts it may gain momentum rapidly. A drive through the field reveals many sheriff's "plasters" and the wells starting after the decline has asserted itself stand far less than an even chance at a profitable production.

Equipment manufacturers have been very lenient in their credit practices, due to the need of maintaining sales. Starting out on a strictly cash basis with the small companies, several manufacturers have decided to take a chance where wells were fairly favorably located. When the payments are in jeopardy, attachment probably will be in order. Past experience in Los Angeles basin townlot fields has demonstrated the speed with which a drilling campaign may become a "standing" campaign.

In justice to leaseholders and operators in the field, it should be recalled that with two producing sands and the possibility of better sand conditions in some parts of the area, production may reach a higher level and may show a slower decline than impartial engineers admit. With such a large number of wells approaching both the upper and lower zones, the field peak may exceed the estimates of several weeks ago. There are no developments to date,

Lower California Production Proposed for 1931

Los Angeles.—Although curtailment has reduced production to a lower level than was even anticipated when the program was placed in effect a year ago, conservation leaders believe that it will be necessary to bring the California output to a still lower average during 1931. General conditions are such that production must necessarily be limited during the next year. No definite plan of action has been advanced, but in view of the impending rise of production at Kettleman Hills, the state total probably should be reduced 50,000 barrels to make room for any appreciable increase in this most critical area. For every barrel of Kettleman Hills crude produced, it will be necessary to shut in three barrels of ordinary crude, such as is produced at Long Beach, to offset the economic change in the setup. It will require the shutting in of five barrels of heavy crude to offset each extra barrel of Kettleman Hills oil. Even with the field held under control, it will produce much more oil than it is now yielding; so it is obvious that the remainder of the state is facing lower totals if stocks are to be reduced and a stable crude market is maintained.

however, which indicate a peak above 40,000 barrels. Average estimates place the absolute peak at 35,000 barrels, with 50,000 barrels the maximum prediction.

An analysis of the action of shallow zone wells leaves a loophole through which engineers who insist that production should not exceed 30,000 barrels may escape. Some of these wells have been producing nearly a month and are flowing within a few barrels of their initial output. It is admitted that if the shallow zone extends well to the southeast and somewhat farther to the north than the present limits indicate, the field may become more of a menace than generally thought. Union Oil Company, B. C. Morrison and others have completed very creditable wells in the upper zone.

Possibility of more favorable developments in the deep zone is influencing operators who believe in the future of the field. Soon after the discovery of the field by Ohio Oil Company, reports mentioned only the deep zone. Although the deeper sand has been disappointing in many of the completions, a tendency to finish wells in this formation could easily grow, should the shallow zone show an unexpected weakness. The discovery well was free from water and performed in every way like a real discovery well. Subsequent completions in the deep zone have not done so well, as a rule, although several of the early producers performed satisfactorily.

From here on out it will be largely a question of the decline against new production. During the past month it has required a number of completions to offset the decline and push the weekly average steadily forward. As additional wells are completed the decline is greater theoretically, but each subsequent period should witness a smaller drop for a fixed group of wells. Should this decline curve flatten out quickly, enough new production may be developed to push the peak higher than past developments indicate. The much importance probably is placed on the field peak, but the tendency to pick the level from which a field starts on its downward journey lends a fascination which is not concurred in by the operators who started too late in the race to obtain profitable completions.

No Outstanding Completions.

One of the most interesting phases of field development has been the absolute absence of an outstanding completion. All high pressure fields in the Los Angeles basin have yielded many large wells during the first part of development, but Playa del Rey has yet to furnish a 5000-barrel producer. The largest completion flowed about 4000 barrels for a short time. It is largely upon this past development that field engineers base their predictions that a very low peak is inevitable. No well is making as much as 2000 barrels, while those producing more than 1000 barrels of clean oil are far in the minority. High peaks and rapid gains are brought about in Los Angeles basin fields only through the completion of large wells during consecutive weeks. Playa del Rey has been unable to meet these requirements.

The field has become the most active in the state, with about 100 wells actually making hole and around 60 falling in the preliminary classifications. New locations have at last shown a tendency to drop and soon completions should exceed the number of new locations. Derricks are as close together in parts of the townlot district as they may be placed. The large leases controlled by Union Oil Company, Ohio Oil Company and Barnsdall Oil Company will be developed slowly, only the necessary offsets now being drilled.

Elmer Oil Company has been one of the most successful operators in the field, having completed several good wells in the townlot sector. The company's Venice 6 was completed this week in the deep zone at 6165 feet with an initial production of 1400 barrels. Other operators completing at least one well were the Ohio Oil Company, California Northern Corporation, Thomas Kelly and Sons, Deuell Petroleum Corporation, York and Smullin, Nelson Petroleum Company, Mason Syndicate, Venice Oil Syndicate and York and Smullin.

The morale of operators who are forced to sell their oil "on the spot" certainly has not been improved by the announcement of at least one large purchaser that it will not take a large quantity of Playa del Rey crude. This action naturally creates a rapid surplus among small refiners who have been taking the overflow from the field. Should the tendency to withdraw purchases increase, it may be a difficult matter to dispose of a production much larger than the present flow.

Principal operators in the field and many companies not directly interested in this area have petitioned the Los Angeles city council to refrain from levying the proposed tax of one per cent on the gross receipts of all operators in the field, the funds derived from such a taxation to be utilized in policing the district and protecting it from fire. Such a levy would be permanent and would place an undue burden upon operators who are aiding employment, the petition of the operators states.

Although the townlot development does not parallel the principal beach strip at Venice or Playa del Rey, it has unmistakably injured the facilities offered the public along a vast strip. Property owners have, as a rule, willingly accepted the damage to their property from a bathing standpoint, hoping to profit handsomely from the oil produced. Conservative petroleum engineers believe that five years from now a large percentage of property owners will express regret that oil was ever found on their land.

Activity at Round Mountain Increases

Bakersfield, California.—Increased activity in the Round Mountain field is following a three-year dull period, during which Shell Oil Company and Honolulu Consolidated Oil Company were content to drill only necessary offsets. The most recent completion, Honolulu Consolidated Oil Company's No. 3-A, is pumping 750 barrels of 17 gravity oil from 2180 feet. The field does not fall in the spectacular class by any means but could become a large potential producer of heavy oil. Crude from this field yields a better grade of lubricating oil than many San Joaquin valley fields and ultimately the area should become a factor among the secondary fields of Kern County. Shell Oil Company is drilling three wells on patented land, Honolulu Consolidated Oil Company controlling the bulk of government permits.

Name Operating Plan Committee

Los Angeles.—A committee of engineers and attorneys has been appointed to draw up a final draft of the operating plan to be adopted for the North Dome at Kettleman Hills, following a series of conferences attended by operators and Dr. George Otis Smith, director of the U. S. Geological Survey and representative of Secretary Wilbur. When it is recalled that the probable value of the field is in excess of $1,000,000,000, some idea of the magnitude of the problem is gained. The probable productive acreage, attitude of several companies holding edge leases, method of operation and many other factors have entered into the discussion.

Complete 3000-Barrel Well On South Slope at Long Beach

Los Angeles.—Completion of a 3000-barrel well on the south slope at Long Beach further demonstrated the tenacity of the field and emphasized the general belief that this area will be a major producer when many other California fields will have fallen by the wayside. Such a producer at this stage of development is outstanding, even if completed in a sector not as intensely developed as other parts of the field.

The new well, Dabney Johnson Oil Corporation's No. 76, is located near Twentieth and Temple Streets and was completed at the intermediate depth of 6250 feet. Production at first test was 2850 barrels, but a subsequnt test showed a higher flow and a slightly greater percentage of water.

Development of the south slope followed a drilling campaign in the southeast sector, but the latter has declined to a low ebb. Considerable interest is attached to Magna Oil Company's test on what is thought to be the smallest lease in the world. Thick streaks of oil sand have been cored between 4900 and 5050 feet. Star Petroleum Company is making a production test in Colby 2, located on the north slope and the deepest drilling well in the field. A string of 4¼-inch casing was cemented at 8480 feet, after drilling to 8550 feet.

The Los Cerritos district gave a weaker account of itself than during previous weeks, but this area should certainly account for several good wells in the immediate future. The 7500-foot zone is one of the best yet found in this part of the field and the tendency to deepen the shallower producers will be reflected in creditable completions over at least a short period.

Huntington Beach Test Not Promising

Huntington Beach, Calif.—The absence of important showings in Superior Oil Company's No. 1, a deep test located near Twentieth Street and Ocean Boulevard, has been a blow to the theory that Huntington Beach should yield at least one more productive deep zone. W. E. McCaslin's Transport 1 is showing more promise, however, cores recovered around 6650 feet having shown thin streaks of oil sand and a predominance of hard brown shale. Local enthusiasm continues unabated, but conservative geologists express a doubt as to the value of the deeper formations in this field. While it is true that deep development has fallen far short of the amount necessary to prove or disprove the presence of a deep zone, the few wells that have been drilled below the deepest producing zone failed to give much encouragement to operators who have anticipated still deeper producing zones.

Form San Joaquin Valley Chapter of A. P. I. Pacific Coast Section

Taft, Calif.—Organization of the San Joaquin Valley chapter of the American Petroleum Institute, Pacific Coast section, has been completed, with this place to be headquarters for the first chapter formed on the Pacific Coast. R. R. Shinn, superintendent of General Petroleum Corporation, was elected chairman, and G. L. Moore, of the Chanslor-Canfield Midway Oil Company, was elected vice-chairman. These two men were empowered to appoint the secretary-treasurer and advisory committee. M. W. Morris, of Standard Oil Company, was selected secretary-treasurer. Norval White, director of the Pacific Coast section, and A. H. Bell, chairman, for the division helped to organize the chapter.

A feature of the first meeting was a talk by W. F. Barbat of Standard Oil Company on "The Relationship of Paleontology to Oil Field Development," in which it was shown that the study of fossils from cores of Kettleman Hills wells had enabled the company to predict the depth necessary to strike the oil sand. He also explained the relation of the Mulinia bed to the Temblor formation.

Short talks were given by J. J. Wilt of Standard Oil Company at Bakersfield, P. T. Martin of The Texas Company, R. R. Shinn of General Petroleum Corporation, H. P. Larkin of Union Oil Company, R. C. Patterson of the U. S. Geological Survey, and Roy M. Smith of Chanslor-Canfield Midway Oil Company.

The next meeting of the chapter will be held December 4. Papers will be read by J. B. Stevens of Associated Oil Company and R. F. Allen, assistant to the California umpire.

North Dome Well's Production Gains

Coalinga, Calif. — Superior Oil Company's Huffman 1, completed a month ago on the flank of the North Dome at Kettleman Hills with an initial production of about 12,000 barrels, has increased its flow to 13,000 barrels of 40 gravity oil, following a decline to 10,400 barrels. The drop in gas production gives the well by far the most satisfactory gas-oil ratio of any producer in the field. With a gas production of about 6000 cubic feet per barrel, the well compares favorably with large producers in other fields. Located on the north plunge, the well proved a large area and lengthened the North Dome by fully two miles. With a production of 6200 barrels from three wells, Standard Oil Company is the next largest producer on the North Dome. Associated Oil Company, Continental Oil Company, Milham Exploration Company and Petroleum Securities Company each has one producing well. Aside from the increased activity caused by the completion of Superior Oil Company's Huffman 1 and the new locations on Section 36-21-17, field work showed little change during the week.

Elwood Operators Move to Further Limit Development

Santa Barbara, Calif.—Following the completion of several of the largest wells ever finished in California, Elwood operators have voluntarily taken steps to further limit field operations in the interest of curtailment.

Pacific Western Oil Company's Permit 92-6 produced 15,000 barrels of clean oil during the last day of a short test, breaking the best previous record by a small margin. Although Elwood operators have complied to the letter with regulations imposed upon them by the conservative committees, the field potential is much larger than it should be had smaller beans been used during production tests.

Much criticism has been heard concerning the methods employed in testing the completions, and perhaps some of this criticism was deserved. Prior to the inauguration of special efforts to establish unusually high potentials, average initial production of the completions had dropped to around 3500 barrels. Pacific Western Oil Company, and Barnsdall Oil Company and Rio Grande Oil Company, the last two operating jointly, have been most successful with recent completions. The first named has operated almost exclusively outside the mean high tide line and has set an enviable record with its completions, regardless of the size of flow beans used.

The field decline has been slower than anticipated, due to the remarkable production obtained far out in the Pacific Ocean. Normally rated as a conservatively developed field, the limited amount of activity has exceeded the average townlot development in importance.

Oil Well Completions and Production Lower in October

By H. J. STRUTH
Staff Economist

FURTHER evidence of curtailment was manifested by the results of field developments in the United States during October. While there was slight gain in the number of wells completed during that month, due to the period constituting 31 days, the number of oil wells completed showed a decline. As a result, initial oil production also declined to a considerable extent and the daily average was materially lower than in September.

Total completions during October amounted to 1199 wells, of which 587 were oil producers, 245 gas wells and 367 failures. Compared with September, well completions showed an increase of 34, while oil wells showed a decline of 32. Gas wells and failures increased over September. Initial oil production for October was sharply lower, partly due to completing fewer producing wells and mostly to the fact that Oklahoma City pool developments are resulting in the completion of smaller wells than in former months.

Oklahoma, Kansas, Gulf Coast, Arkansas, Rocky Mountain States and California reported decreases in daily average production during October, while Texas, outside of Gulf Coast, North Louisiana and Eastern States reported gains. The net result for the United States amounted to a total decline in daily average crude production for the month of 38,350 barrels, bringing the national total down to 2,375,050 barrels, compared with 2,413,400 barrels in September. Total crude production for October showed a slight gain over September as a result of having been computed on a basis of 31 days compared with 30 days in September. Oklahoma operators succeeded in bringing the state production down to 544,600 barrels, against an allowable figure of 550,000 barrels. California production was also reduced below the maximum figure for that state, although a later survey of requirements contemplates a further reduction. Total daily average crude production in Texas amounted to about 778,350 barrels, or slightly above the allowable figure of 775,000 barrels ordered by the Railroad Commission.

UNITED STATES PRODUCTION

Following is the gross production in the United States (in barrels of 42 gallons) during October, as compiled from daily averages reported by the American Petroleum Institute. There are differences between the figures shown below and those contained elsewhere in this issue. The figures below are the result of calculating A. P. I. estimates for the representative fields.

	Daily Average Production		Total Production
State—	October*	September	October*
Oklahoma	544,600	558,900	16,883,550
Kansas	115,150	116,550	3,568,750
Texas (outside Gulf Coast)	610,700	606,550	18,932,550
Gulf Coast	195,000	200,750	6,044,200
North Louisiana	41,300	40,150	1,280,800
Arkansas	52,750	53,550	1,635,100
Eastern States	121,900	121,400	3,779,250
Rocky Mountains	103,300	110,650	3,202,800
California	590,350	604,900	18,300,350
Total	2,375,050	2,413,400	73,627,350

*Preliminary—Subject to revision.

Eastern Completions Gain

In the Eastern States, the number of wells completed during October showed a gain over September and initial oil production was also larger as a result of completing several unusually large wells in Kentucky and Michigan. New York state results showed practically little change over September. Pennsylvania reported fewer well completions during October and smaller initial production, although the Bradford district reported a gain in both well completions and initial oil production. Central, Southeastern and Northwestern Ohio reported more wells completed and a gain in initial oil production. The Central Ohio fields showed a gain in well completions of 24 and a gain in initial oil production of 892 barrels. West Virginia reported a gain in well completions but a decline in initial oil production.

Two good oil wells in Hart County, Kentucky, with a combined initial of 1500 barrels of oil, boosted the total initial output of that state from 852 barrels in September to 2960 barrels in October. Well completions reported for Kentucky increased from 59 in September to 70 in October. Indiana and Illinois reported a slight decrease in well completions during October, but a gain in initial oil production over September. The Michigan area contributed fewer wells during October but a gain in initial oil production. The completion of a 1497-barrel well in the Midland field of that state was mostly responsible for the gain in initial oil production during October. Isabelle County operations resulted in a sharp decline in both well completions and initial oil production. Gas well operations in Mississippi continued to show good results during October, although the number of wells completed and initial volume was smaller than in September.

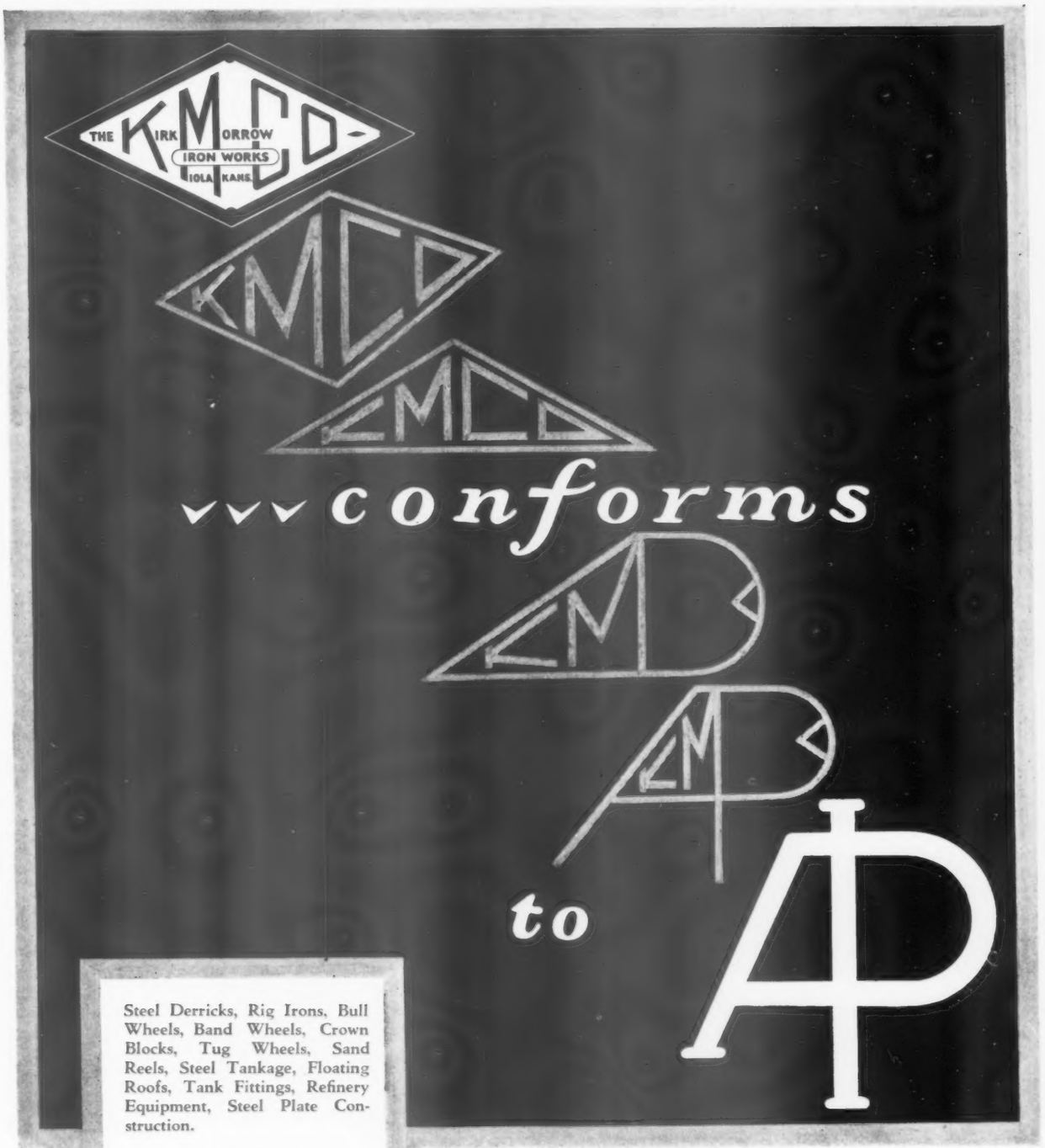
Oklahoma Decline

Oklahoma reported a sharp decline in initial oil production during October, directly as a result of the bringing in of considerably smaller wells in that area. During October, this field reported 54 producers completed, with an aggregate initial production of 346,622 barrels. This compares with 84 producing wells completed in September with a total initial production of 608,995 barrels. This indicates that the head is about off the main producing horizon of the Oklahoma City area and may soon be felt in a rapid decline there. It is noted, however, that extremely large wells are still being brought in outside of the main proven area, indicating that extensions will probably offset the effect of a natural decline in the main field.

Kansas reported practically little change in either well completions or production during October.

California Initial Lower

Well completions in California during October were



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UNITED STATES FIELD STATISTICS

Following are the completions, showing oil wells, gas wells, failures and initial production of crude oil and gas by states for the month of October, as compiled by THE OIL WEEKLY:

State—	Completions	Producers	Gas Wells	Failures	Initial Production Oil	Gas*
Arkansas	15	6	4	5	15	16½
California	62	56	..	6	36,620	..
Illinois	12	10	..	2	245	..
Indiana	23	11	4	8	192	6
Kansas	89	28	28	33	13,643	165¼
Kentucky	70	32	11	27	2,960	17
Louisiana	75	22	21	32	11,632	272¼
Michigan	23	6	3	14	2,172	26¼
Mississippi	6	..	4	2	.....	133
New York	8	7	1	..	20	¼
Ohio	151	44	58	49	1,325	57¼
Oklahoma	221	131	35	55	381,330	480½
Pennsylvania	54	38	9	7	227	6
Texas	322	180	31	111	164,359	566½
West Virginia	68	16	36	16	127	28¾
Total	1199	587	245	367	615,002	1775½

* Millions of Cubic Feet.

PAST TWELVE MONTHS

The record for the past 12 months is an interesting study for comparative purposes, the following table giving the field statistics for all states:

Month—	Completions	Producers	Gas wells	Failures	Initial Prod.
August	2,552	1,507	337	708	541,720
September	2,169	1,310	234	624	448,283
October	2,447	1,414	301	732	433,990
November	1,965	1,139	283	543	442,170
December	1,791	978	275	538	433,264
January, 1930	1,918	1,142	296	480	685,325
February	1,463	881	201	381	990,896
March	1,544	794	220	530	665,535
April	1,702	1,023	180	499	776,024
May	1,973	1,125	228	611	771,977
June	1,679	950	223	506	580,997
July	2,144	1,167	306	671	845,068
August	1,837	930	310	597	1,160,055
September	1,165	619	208	338	833,109
October	1,199	587	245	367	615,002

Note—Rocky Mountain data omitted.

exactly the same in number as in September; 62 wells. Producing wells completed showed a gain in October to 56 from 52 in September. Initial oil production was sharply lower, declining from 62,295 barrels in September to 36,620 barrels in October. Santa Fe Springs reported no completions during the month, while Long Beach and Playa del Rey reported increases in both wells completed and initial oil production. Playa del Rey showed a gain of three wells completed during October, from 18 wells to 21, while initial oil production increased from 14,775 barrels in September to 15,600 barrels in October. Long Beach well completions increased from 14 in September to 22 in October, while initial oil production increased from 5390 barrels in September to 13,560 barrels in October.

Louisiana

Wildcat operations in North Louisiana resulted in the completion of 23 wells during October, compared with 19 in September. Eight producers completed in wildcat territory during October in this state yielded a total initial output of 3395 barrels. In the preceding month four producing wildcat wells yielded only 941 barrels of oil. More wells were completed in the Louisiana Gulf Coast, but initial oil production was slightly lower during October. Sulphur Dome reported the completion of one producing well with an initial output of 4300 barrels. Vinton reported completion of two producing wells with a total initial of 2650 barrels.

There was a sizeable gain in well completions and initial oil production in the Texas Gulf Coast during October. Well production showed a gain from 15,276 barrels to 19,185 barrels. Barbers Hill, Pierce Junction and Spindle Top are credited with the bulk of the gain in initial oil production of the Texas Gulf Coast during October.

Texas Decline

North Texas, Texas Panhandle, Southwest Texas and West Texas all reported material declines in well completions during October. These areas also contributed less new production during that month, compared with September. Gray County, in the Panhandle, completed only 16 wells during October, compared with 18 in September, while initial oil production declined from 10,705 barrels in September to 4555 barrels in October. The Darst Creek field, in Southwest Texas, reported a gain in well completions from 17 in September to 19 in October and initial oil production increased from 17,970 barrels in September to 20,005 barrels in October. Well completions in North Texas declined from 46 in September to only 28 in October, while West Central Texas reported a decline in well completions from 102 in September to 83 in October. In East Central Texas, the Van Zandt area reported the completion of 22 wells in October, against 23 in September. Initial oil production of this area showed a sharp increase, from 43,676 barrels in September to 104,550 barrels in October.

Ector and Pecos Counties in West Texas reported fewer well completions during October and a smaller initial oil production. Glasscock County completed two wells during October with a total initial of 1960 barrels. Reagan County also completed two wells that were credited with a combined initial production of 3090 barrels. Wildcat operations in West Texas resulted in only one producing well with an initial of 10 barrels, although seven wells were completed. During September, wildcats completed amounted to 14, of which four were producers with an initial of 350 barrels.

Second Test of Dry Creek Located

Red Lodge, Montana.—Ohio Oil Company has made a new location on the newly-proved Dry Creek structure, Carbon County, southern Montana. The well is to be about 600 feet north of the company's discovery oil well. Ohio Oil Company has a corps of surveyors in the field establishing corners of leases, and spotting new locations, none of which, however, are to be drilled for some time to come with the exception of that location on which derrick is now being built. No sustained test of the discovery well has been made but it is believed to be good for 1000 barrels at least. The oil is very high gravity, and is to be shipped to Utah Oil Refining Company's refinery in Salt Lake City. Loading racks on the Northern Pacific railway are constructed for shipments.

Summary of Field Operations for October, 1930

RECAPITULATION—UNITED STATES

	Completions	Producers	Gas wells.	Failures.	Initial Production Oil	Initial Production Gas*	Total Production
Oklahoma	221	131	35	55	381,330	480½	16,833,550
Kansas	89	28	28	33	13,643	165¼	3,568,750
Texas (outside Gulf Coast)	242	124	28	90	145,174	511½	18,932,900
Gulf Coast	104	66	3	35	27,370	55	6,044,150
North Louisiana	51	12	21	18	3,447	272¼	1,280,800
Arkansas	15	6	4	5	150	16½	1,635,100
Eastern States	415	164	126	125	7,268	274¼	3,779,250
Rocky Mountains	(a)	(a)	(a)	(a)	(a)	(a)	3,202,800
California	62	56	..	6	36,620	.....	18,300,350
Total for October	1,199	587	245	367	615,002	1,775½	73,627,650
Total for September	1,165	619	208	338	833,109	2,260¼	72,410,750

*Millions of cubic feet.
(a) Not available.

NEW YORK

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Initial Production Gas*
Allegany	8	7	1	.	20	¼
Total	8	7	1	.	20	¼

PENNSYLVANIA

Allegheny	1	1	.	.	35	.
Beaver	2	.	.	2	..	.
Bradford	32	32	.	.	157	.
Butler	3	1	1	1	4	1½
Center-Middle	1	1	.	.	2	.
Clarion	6	2	2	2	4	½
Greene	2	.	2	.	.	2½
Somerset	2	.	.	2	.	.
Washington	5	1	4	.	25	1½
Total	54	38	9	7	227	6

CENTRAL OHIO

Ashland	12	2	3	7	35	3¼
Ashtabula	1	.	.	1	.	.
Athens	12	2	7	3	20	8½
Belmont	4	1	2	1	3	1½
Coshocton	4	2	1	1	190	½
Delaware	1	.	.	1	.	.
Fairfield	2	.	.	2	.	.
Guernsey	1	1	.	.	20	.
Hocking	2	.	.	2	.	.
Holmes	5	3	1	1	109	6½
Knox	5	1	1	3	110	½
Licking	13	8	1	4	293	¼
Lorain	6	.	4	2	.	4½
Medina	12	4	6	2	90	4¼
Muskingum	8	4	2	2	311	2¾
Perry	6	.	3	3	.	2
Richland	1	.	.	1	.	.
Stark	1	.	1	.	.	½
Summit	5	.	4	1	.	12
Tuscarawas	1	.	1	.	.	¾
Wayne	3	.	2	1	.	¾
Total	105	28	39	38	1,181	48½

SOUTHEASTERN OHIO

Columbia	2	.	.	2	.	.
Jefferson	1	.	.	1	.	.
Mahoning	1	1	.	.	1	.
Monroe	5	1	3	1	5	1¼
Morgan	6	2	4	.	2	2¼
Noble	3	2	1	.	3	¾
Washington	6	4	1	1	113	½
Total	24	10	9	5	124	4¾

NORTHWESTERN OHIO

Auglaize	1	1	.	.	1	.
Hancock	3	.	1	2	.	¼
Hardin	8	.	6	2	.	3
Lucas	3	3	.	.	12	.
Seneca	5	1	2	2	2	½
Shelby	1	1	.	.	5	.
Wyandot	1	.	1	.	.	¼
Total	22	6	10	6	20	4
Total Ohio	151	44	58	49	1,325	57¼

WEST VIRGINIA

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Initial Production Gas*
Boone	4	1	3	.	25	2¾
Cabell	4	.	3	1	.	1¼
Calhoun	11	4	4	3	35	3¼
Clay	2	1	1	.	25	¼
Doddridge	3	1	2	.	1	1
Gilmer	6	1	4	1	5	10¼
Hancock	1	.	.	1	.	.
Kanawha	3	.	3	.	.	1
Lewis	1	.	1	.	.	¾
Lincoln	1	.	1	.	.	¼
Marion	4	.	4	.	.	2¾
Marshall	1	.	1	.	.	1¼
Mingo	3	1	.	2	5	.
Monongalia	2	1	.	1	1	.
Pleasants	1	.	.	1	.	.
Putnam	2	.	2	.	.	¾
Ritchie	2	.	1	1	.	¼
Roane	4	.	3	1	.	1
Tyler	1	.	.	1	.	.
Upshur	2	1	1	.	1	¼
Wayne	1	.	1	.	.	½
Wetzel	1	.	1	.	.	1¼
Wood	8	5	.	3	29	.
Total	68	16	36	16	127	28¼

KENTUCKY

Daviess	8	2	.	6	115	.
Estill	3	3	.	.	31	.
Hancock	8	3	1	4	55	2
Hart	2	2	.	.	1,500	1
Henderson	11	4	1	6	19	½
Johnson	3	2	.	1	13	.
Knox	1	.	1	.	.	7
Lee-Owsley	1	1	.	.	10	.
McLean	4	3	.	1	293	.
Metcalf	1	.	1	.	.	2
Ohio	26	12	7	7	924	4½
Warren	2	.	.	2	.	.
Total	70	32	11	27	2,960	17

INDIANA

Adams	1	1	.	.	10	.
Davies	2	.	1	1	.	1½
Huntington	1	.	.	1	.	.
Jay	1	1	.	.	2	.
Marion	1	.	1	.	.	½
Perry	7	5	.	2	42	.
Pike	6	2	2	2	39	4
Randolph	1	.	.	1	.	.
Sullivan	1	.	.	1	.	.
Vigo	2	2	.	.	99	.
Total	23	11	4	8	192	6

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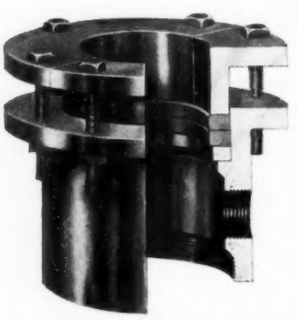

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ILLINOIS

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Gas*
Clark	2	1	.	1	1	.
Crawford	4	4	.	.	73	.
Marion	1	1	.	.	6	.
St. Clair	2	1	.	1	77	.
Wabash	3	3	.	.	88	.
Total	12	10	.	2	245	.

MICHIGAN

Barren	2	.	.	2	.	.
Barry	1	.	.	1	.	.
Gratiot	2	.	.	2	.	.
Iosco	1	.	.	1	.	.
Isabella	9	4	2	3	650	26
Manistee	1	.	1	.	.	¼
Micosta	1	.	.	1	.	.
Midland	1	1	.	.	1,497	.
Muskegon	3	1	.	2	25	.
Ottawa	1	.	.	1	.	.
Wexford	1	.	.	1	.	.
Total	23	6	3	14	2,172	26¼

MISSISSIPPI

Wildcats	6	.	.	2	.	133
Total	6	.	4	2	.	133
Total Eastern States	415	164	126	125	7,268	274½
Total Production Eastern States						3,779,250

OKLAHOMA

Beckham	2	.	1	1	.	25
Caddo	4	3	1	.	172	35
Carter	16	15	.	1	13,066	.
Cherokee	1	.	.	1	.	.
Comanche	1	1	.	.	1	.
Creek	15	5	5	5	260	97
Garfield	1	.	.	1	.	.
Garvin	2	.	.	2	.	.
Grady	1	.	1	.	.	7
Hughes	9	3	3	3	1,065	54½
Kay	3	.	3	.	.	4
Latimer	2	.	2	.	.	24
Lincoln	1	.	.	1	.	.
Logan	1	1	.	.	35	.
Marshall	6	1	.	5	10	.
McIntosh	2	.	1	1	.	¾
Muskogee	17	3	3	11	255	3¼
Okfuskee	4	3	1	.	105	7
Oklahoma	54	54	.	.	346,622	150
Okmulgee	8	1	5	2	12	30
Osage	11	5	3	3	430	14¾
Pawnee	6	4	.	2	87	.
Payne	2	1	1	.	5	5½
Pittsburg	1	.	1	.	.	14
Pontotoc	3	2	.	1	80	.
Pottawatomie	13	12	.	1	8,275	.
Seminole	12	9	.	3	10,450	.
Stephens	3	3	.	.	330	.
Texas	1	.	1	.	.	2¾
Tulsa	3	2	.	1	35	.
Wagoner	16	3	3	10	35	6
Total	221	131	35	55	381,330	480½

CALIFORNIA

Belridge	1	1	.	.	2,800	.
Huntington Beach	2	2	.	.	155	.
Kern Front	1	1	.	.	150	.
Long Beach	22	22	.	.	13,560	.
Maricopa Flats	5	5	.	.	855	.
Midway-Sunset	1	1	.	.	550	.
Playa del Rey	21	21	.	.	15,600	.
Ventura	2	2	.	.	2,550	.
Wildcats	7	1	.	6	400	.
Total	62	56	.	6	36,620	.

CALIFORNIA PRODUCTION SUMMARY

Inglewood	479,300
Midway-Sunset	1,846,000
Ventura	1,442,900
Seal Beach	576,900
Elwood	1,124,200
Kettleman Hills	764,300
Santa Fe Springs	2,924,000
Huntington Beach	866,400
Dominguez	310,000
Playa del Rey	722,500
Long Beach	3,058,850
Others	4,185,000
Total	18,300,350

KANSAS

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Gas*
Barber	2	.	1	1	.	12½
Butler	4	3	.	1	540	.
Chautauqua	3	1	1	1	50	2
Coffey	3	.	.	3	.	.
Cowley	3	1	.	2	500	.
Dickinson	1	.	.	1	.	.
Elk	1	1	.	.	20	.
Ellis	2	2	.	.	280	.
Franklin	1	.	1	.	.	2½
Graham	2	.	.	2	.	.
Greenwood	12	7	.	5	380	.
Kingman	1	.	.	1	.	.
Marion	3	2	.	1	150	.
McPherson	7	3	3	1	6,995	37
Reno	2	.	1	1	23	.
Rice	3	.	.	3	.	.
Rush	2	.	.	2	.	.
Russell	1	.	.	1	.	.
Sedgwick	12	8	.	4	4,705	.
Stevens	22	.	21	1	.	111¼
Sumner	1	.	.	1	.	.
Woodson	1	.	.	1	.	.
Total	89	28	28	33	13,643	165¼

KANSAS PRODUCTION SUMMARY

Greenwood	576,100
Florence	24,100
Peabody	77,100
Eldorado	430,950
Augusta-Fox-Bush	89,350
Rainbow Bend	33,100
Voshell	277,550
Russell	94,000
Churchill	109,800
Oxford	78,600
Sedgwick	704,500
Others	1,073,100
Total	3,568,750

OKLAHOMA PRODUCTION SUMMARY

	Barrels
Braman	97,900
Blackwell	95,000
Hubbard	41,750
Thomas	20,500
Tonkawa	191,750
Garber	144,400
Burbank	471,850
Osage	767,250
Cushing	416,500
Yale	218,050
Davenport	34,350
Bristow Slick	454,350
North Okmulgee	321,350
South Okmulgee	211,600
Cromwell	221,900
Papoose	81,150
Wewoka	130,250
Seminole	441,500
East Seminole	67,250
Bowlegs	453,150
Searight	219,100
Little River	759,700
East Little River	386,500
Earlsboro	646,700
East Earlsboro	558,750
Duncan	272,800
Graham	100,300
Fox	36,850
Healdton	372,700
Hewitt	215,750
Scholem-Alechem	430,500
Pearson	21,700
Oklahoma City	2,859,450
Mission	203,250
Carr City	271,550
Asher	34,650
Sasakwa	164,950
St. Louis	728,600
Allen	430,350
Maud	105,650
Logan	140,300
West Asher	234,050
South Earlsboro	313,200
Konowa	561,450
Others	1,932,950
Total	16,883,550

LOUISIANA GULF COAST

	Completions	Producers	Gas Wells	Failures	Initial Oil	Prod. Gas*	Total Prod.
Bayou Bouillion	..	..	..	..	..	..	7,650
Bayou Blue Dome	1	1	..	..	25	..	.....
Bayou Choctau	1	..	..	1	..	..	.....
Charenton	1	..	..	1	..	..	.....
East Hackberry	2	1	..	1	90	..	72,500
Edgerly	1	1	..	..	60	..	16,500
Evangeline	2	1	..	1	210	..	51,250
Hackberry	2	..	..	2	..	..	48,200
Hager Dome	1	..	..	1	..	..	.....
Jefferson Island	1	..	..	1	..	..	.....
Lake Barre	..	..	..	..	..	..	29,700
Lake Grande Ecaille	1	..	..	1	..	..	.....
Lockport	2	2	..	..	825	..	100,250
Port Barre	..	..	..	..	..	..	96,550
Roanoke	1	..	..	1	..	..	.....
Sorrento	..	..	..	..	..	..	1,550
Starks Dome	3	1	..	2	25	..	.....
Sulphur	1	1	..	..	4,300	..	105,400
Sweet Lake	2	..	..	2	..	..	35,650
Vinton	2	2	..	..	2,650	..	209,600
White Castle	..	..	..	..	..	..	34,100
Others	..	..	..	..	..	..	38,900
Total	24	10	..	14	8,185	..	847,800
Total Louisiana	75	22	21	32	11,632	272¼	2,128,600

NORTH LOUISIANA

Bossier	5	..	3	2	..	12½	.....
Caddo	1	..	1	..	..	7½	349,650
Carterville	..	..	..	..	..	..	79,250
Cotton Valley	..	..	..	..	..	..	58,700
De Soto	..	..	..	..	..	..	92,700
Haynesville	..	..	..	..	..	..	156,950
Holly	..	..	..	..	..	..	28,000
Homer	..	..	..	..	..	..	105,950
Morehouse	2	..	2	..	..	10¾	.....
Ouachita	6	..	6	..	..	51	.....
Richland	7	..	7	..	..	179¼	.....
Sabine	3	3	..	..	27	..	.....
Union	2	..	2	..	..	11¼	.....
Urania	..	..	..	..	..	..	165,400
Webster	2	1	..	1	25	..	.....
Zwolle	..	..	..	..	..	..	191,850
Wildcats	23	8	..	15	3,395	..	.....
Others	..	..	..	..	..	..	52,350
Total	51	12	21	18	3,447	272¼	1,280,800

PANHANDLE

Carson	9	3	6	..	475	182	222,450
Gray	16	16	..	..	4,555	8	1,715,450
Hutchinson	6	3	1	2	450	4¾	524,800
Roberts	1	..	..	1	..	..	.....
Wheeler	5	1	4	..	10	131	18,050
Others	..	..	..	..	..	..	17,750
Total	37	23	11	3	5,400	325¾	2,498,500

MOUNTAIN STATES PRODUCTION SUMMARY

WYOMING

Salt Creek	867,950
Grass Creek	64,250
Elk Basin	24,800
Big Muddy	62,450
Lost Soldier	174,900
Rock Creek	65,650
Lance Creek	3,300
Oregon Basin	63,550
La Barge	58,100
Others	140,500
Total	1,525,400

MONTANA

Cat Creek	34,100
Sunburst	168,100
Pondera	52,150
Others	3,100
Total	257,450

COLORADO

Moffats	33,000
Fort Collins	35,300
Florence	14,550
Others	46,700
Total	129,550

NEW MEXICO

Table Mesa	3,100
Artesia	20,400
Hogback	13,150
Rattlesnake	39,100
Lea	242,100
Hobbs	968,050
Eddy	4,500
Total	1,290,400
Total Mountain States	3,202,800

TEXAS GULF COAST

	Completions	Producers	Gas Wells	Failures	Initial Oil	Prod. Gas*	Total Prod.
Allen	2	1	..	1	1,550	..	.....
Barbers Hill	12	11	..	1	5,920	..	638,900
Batson	4	3	..	1	50	..	35,650
Big Creek	1	1	..	..	1,000	..	118,800
Blue Ridge	..	..	..	..	..	..	54,000
Boling	..	..	..	..	..	..	31,000
Clay Creek	1	1	..	..	250	..	76,550
Damon Mound	1	..	..	1	..	..	21,700
Esperson Dome	1	1	..	..	125	..	95,450
Fannett	..	..	..	..	..	..	21,050
Goose Creek	..	..	..	..	..	..	140,605
Hankamer	..	..	..	..	..	..	46,800
Hull	4	4	..	..	400	..	235,800
Humble	7	6	..	1	512	..	518,900
Moss Bluff	1	1	..	..	1,100	..	.....
Mykawa	1	1	..	..	560	..	.....
North Dayton	1	..	..	1	..	..	31,550
Orange	..	..	..	..	..	..	62,350
Orchard	..	..	..	..	..	..	59,850
Pettus	14	5	3	6	1,093	55	239,300
Pierce Junction	7	4	..	3	2,600	..	324,600
Port Neches	..	..	..	..	..	..	44,850
Raccoon Bend	6	3	..	3	990	..	303,150
Refugio	8	7	..	1	1,600	..	822,050
Saratoga	3	3	..	..	175	..	36,800
Sour Lake	..	..	..	..	..	..	68,200
South Liberty	1	..	..	1	..	..	98,300
Spindle Top	4	4	..	..	1,260	..	488,500
Sugar Land	..	..	..	..	..	..	367,750
West Columbia	..	..	..	..	..	..	131,650
Wild Cats	1	..	..	1	..	..	.....
Others	..	..	..	..	..	..	82,200
Total	80	56	3	21	19,185	55	5,196,350

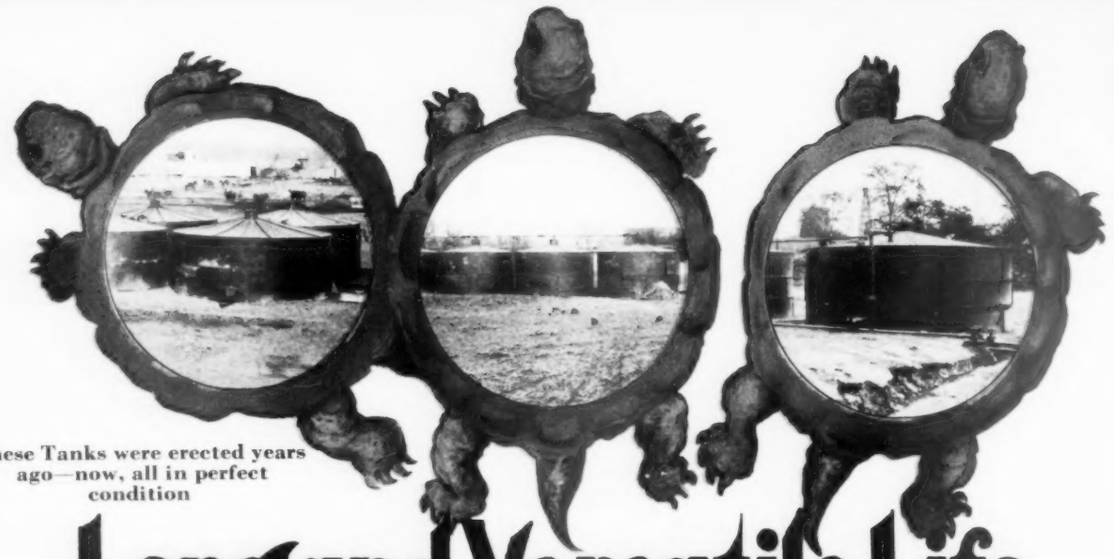
ARKANSAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Production Gas*
Ouachita	4	3	.	1	75	.
Union	4	3	1	.	75	2
Wildcats	7	.	3	4	.	14½
Total	15	6	4	5	150	16½

ARKANSAS PRODUCTION SUMMARY

El Dorado	126,900
Champagnolle	111,550
Smackover Light	154,000
Smackover Heavy	1,127,750
Stephens	27,900
Nevada	31,350
Lisbon	26,900
Others	28,750
Total	1,635,100

Longevity



These Tanks were erected years ago—now, all in perfect condition

Long and Versatile Life

The B. S. & B. Tanks are as hardy as a turtle, and, like them, live for years and years withstanding the hardships and battles with the elements and varying conditions.

These tanks are accurately and substantially constructed. They are made in sections so that they may be readily moved to new fields. In numerous instances the same B. S. & B. Tanks have served in as many as nine locations, and are still in excellent condition. Throughout the Mid-Continent Field, there are B. S. & B. Tanks that have functioned for many years, and are still on the job. And there are many other such instances of long and versatile life! Due to their service and durability, B. S. & B. Tanks are today predominating the Oil Fields of America.

B.S.&B. Perfection Vapor Pressure TANKS

TESTED For Long Life

The Manufacturers of B. S. & B. Tanks have put forth every effort, and all possible energy to make a good tank "better." All material that is used is constantly being tested so as to keep to the highest quality for the extraordinary service that is required of it. The composition gasket material, for example, must undergo pressure tests. Paints are subjected to long weathering tests. Even the bolts are regularly tested for tensile strength. There are engineers constantly traveling throughout the fields, checking up on the tanks and conditions, so as to plan possible improvements which are later subjected to strict laboratory and actual practice tests for definite proof.

Construction

Each small or large part that goes into the B. S. & B. Tank is as accurate as is possible for man and machine to make it. These tanks are of flange type construction, there being four layers of metal, plus a special packing that makes the tank absolutely leakproof, and vapor pressure TIGHT. Like the hard shell of the turtle, this tank is so constructed that it will not collapse. Its shell is made in sections for portability and easy replacement. However, the tank gets its strength from other sources than just its hard shell of Copper-bearing steel. The inside construction—angle-iron tie rods, ladder, pie-shaped segmental deck and bottom, as well as even the bolts themselves (special heat treated) all add strength. It is STRUCTURALLY CORRECT, and will even outlive the long-lifed turtle.

B. S. & B. Vapor Pressure Wood Tanks

These tanks defy corrosion. They are made of Redwood, with all metal on the inside insulated with wood which prohibits the hydrogen sulphide gas of sour crude from coming in contact with the metal parts. Like the B. S. & B Steel Vapor Pressure Tank they are equipped with the B. S. & B. Thief Hole Pressure Vacuum Valve which retains the light fractions of the crude at 16 ounces pressure or 2 ounces vacuum.

B. S. & B. Safety Steel Walk Ways Stair

Build for permanence and avoid fire risks with your Stairways and Walkways! Make them safe for your men, even in stormy weather. B. S. & B. Safety Walkways and Stairways are made of steel—are easy to construct from our standardized parts and are thereby adjustable to any size, length, or height, are portable, too. Let us install this safety device when we erect or move your storage tanks.

We manufacture A.P.I. Tanks, also. The B. S. & B. A.P.I. Tanks conform to the A.P.I. Dimensional standards and the exacting standards of B. S. & B. manufacture. All these tanks carry the official A.P.I. monogram.

Let us tell you more about the B. S. & B. Tanks, etc. We now have a man near you who would call and discuss "tanks." Or write for descriptive literature. Please address Dept. X-12.

Black Sivalls & Bryson INC.
BARTLESVILLE - OKLAHOMA

TEXAS RECAPITULATION

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Initial Production Gas*	Total Production
Panhandle	37	23	11	3	5,490	325¾	2,498,500
South	37	33	3	1	21,619	35½	3,241,500
North	28	13	..	15	605	..	1,948,750
East	3	..	2	1	...	49	.....
East Central	27	21	..	6	104,550	..	1,278,750
West Central	83	14	12	57	4,405	46	1,472,300
West	27	20	..	7	8,505	55¼	8,493,100
Total Texas (outside Gulf Coast)	242	124	28	90	145,174	511½	18,932,900
Gulf Coast	80	56	3	21	19,185	55	5,196,350
Grand Total	322	180	31	111	164,359	566½	24,129,250

* Millions of Cubic Feet.

SOUTH TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Oil	Prod. Gas*	Total Prod.
Bexar	2	2	..	..	17	..	.....
Chapman	2	2	..	..	700	..	303,500
Dale	..	..	..	..	..	..	7,750
Darst Creek	19	19	..	..	20,005	..	1,590,450
Duval	3	2	..	1	415	..	.....
Jim Hogg	1	..	1	..	..	5½	.....
Laredo	..	..	..	..	..	..	417,350
Luling	..	..	..	..	..	..	307,300
Lytton Springs	..	..	..	..	..	..	26,400
Roma	1	..	1	..	..	15	.....
Salt Flat	..	..	..	..	..	..	521,350
Somerset	..	..	..	..	..	..	48,000
Webb	1	1	..	..	12	..	.....
Williamson	1	1	..	..	50	..	.....
Zapata	7	6	1	..	420	15	.....
Others	..	..	..	..	..	..	19,350
Total	37	33	3	1	21,619	35½	3,241,500

NORTH TEXAS

Archer	10	4	..	6	100	..	415,000
Baylor	1	..	..	1	..	..	.....
Burkburnett	..	..	..	..	..	..	242,150
Clay	3	2	..	1	90	..	.....
Cooke	8	5	..	3	320	..	.....
Denton	1	..	..	1	..	..	.....
Electra	..	..	..	..	..	..	321,800
K M A-Iowa Park	..	..	..	..	..	..	141,800
Montague	1	..	..	1	..	..	285,750
Wichita	3	1	..	2	60	..	.....
Wilbarger	1	1	..	..	35	..	483,330
Others	..	..	..	..	..	..	58,950
Total	28	13	..	15	605	..	1,948,750

WEST CENTRAL TEXAS

Brown	2	..	1	1	..	1¼	168,100
Callahan	4	1	1	2	10	½	93,000
Coleman	7	1	..	6	700	..	80,300
Eastland	6	1	3	2	50	33¼	164,100
Erath	2	..	2	..	..	1	.....
Jack	1	..	..	1	..	..	63,750
Palo Pinto	5	2	2	1	25	2¼	15,100
Parker	1	..	..	1	..	..	.....
Shackelford	2	..	1	1	..	½	179,750
Stephens	5	2	2	1	60	6¾	164,800
Throckmorton	9	2	..	7	14	..	21,700
Young	39	5	..	34	3,546	..	462,300
Others	..	..	..	..	..	..	59,400
Total	83	14	12	57	4,405	46	1,472,300

EAST CENTRAL TEXAS

Boggy Creek	..	..	..	..	..	..	76,150
Corsicana-Powell	..	..	..	..	..	..	166,500
Currie	..	..	..	..	..	..	10,050
Limestone	1	..	..	1	..	..	.....
Mexia	..	..	..	..	..	..	130,650
Nigger Creek	..	..	..	..	..	..	5,850
Richland	..	..	..	..	..	..	5,650
Van Zandt	22	21	..	1	104,550	..	864,000
Wortham	..	..	..	..	..	..	19,900
Wildcats	4	..	..	4	..	..	.....
Total	27	21	..	6	104,550	..	1,278,750

EAST TEXAS

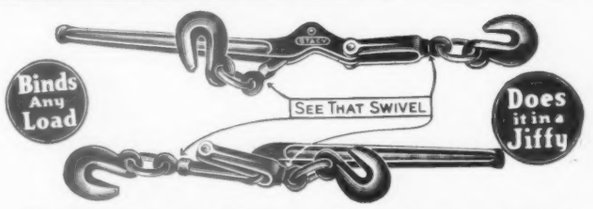
Wildcats	3	..	2	1	..	49	.....
Total	3	..	2	1	..	49	.....

WEST TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Oil	Prod. Gas*	Total Prod.
Crane	..	..	..	..	..	..	1,071,150
Crockett	..	..	..	..	..	..	64,150
Ector	2	2	..	..	1,240	..	232,100
Glasscock	2	2	..	..	1,960	..	.....
Howard	..	..	..	..	..	..	871,400
Irion	1	1	..	..	65	..	.....
Jones	..	..	..	..	..	..	41,000
Loving	3	3	..	..	1,550	..	.....
Mitchell-Scurry	1	1	..	..	30	..	67,000
Pecos	7	6	..	1	260	..	98,700
Reagan	2	2	..	..	3,090	55¼	756,700
Upton	1	1	..	..	90	..	.....
Ward	1	1	..	..	210	..	.....
Winkler	..	..	..	..	..	..	1,870,650
Yates	..	..	..	..	..	..	3,197,150
Wildcats	7	1	..	6	10	..	.....
Others	..	..	..	..	..	..	223,100
Total	27	20	..	7	8,505	55¼	8,493,100

"BOOMERS"

Stacy Swivel Load Binders



A Handy Time-Saving Tool

Stacy Swivel Load Binders have many practical Oil Field uses. They make hauling safe and save time and work by binding any load quickly, easily, securely. No load is too big or too heavy for this indispensable tool. Photograph below shows how the Stacy Binder holds a pipe welding clamp firm. Made in 5 sizes, weighing from 2 lbs. to 14 lbs. for each single tool, not for a pair as commonly quoted, sold and used.

Used in Every Oil Field in the World

Just ask your jobber or export agent for Stacy Load Binders in the size you want. He'll do the rest. I also sell chains. Any weight, size or length with hooks or as desired.

EUGENE C. STACY, Manufacturer, Tiffin, Ohio., U.S.A.

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
ELWOOD—		
Bankline Oil Co., State 89-7	3300	3435
Pacific Western Oil Co., State 92-6	15,000	3515
HUNTINGTON BEACH—		
Standard Oil Co., Jones Comm. 6	40	2500
INGLEWOOD—		
Standard Oil Co., L. A. I. 164	400	2650
LONG BEACH—		
E. E. Combs, No. 15	250	7520
James Oil Co., No. 7	200	5230
M. A. Oil Co., Signal 1	400	5165
Richfield Oil Co., Haas 2	1000	3095
Two-in-One Oil Co., Hughes 1	900	7525
Vesta Oil Co. No. 5	550	7445
Zenith Oil Corp., No. 3	400	7640
MARICOPA FLATS—		
Standard Oil Co., No. 5K-68	200	2195
California-Western Oil Co., Havenstrite 6	200	4015
PLAYA DEL REY—		
California Northern Oil Co., Lind Blade 5	850	4202
Deuell Pet. Corp., Venice 2	300	6260
Thos. Kelly and Sons, Kelly-Gage 1	500	4575
The Ohio Oil Co., H-1	800	4565
I-1	425	4625
J. W. Todd, No. 1	800	4510
York and Smullin Co., No. 2	600	4580
ROUND MOUNTAIN—		
Honolulu Consolidated Oil Co., No. 3-A	750	2180
SANTA FE SPRINGS—		
General Pet. Corp., Anderson 153-C.	125	5335
No. 160-D	60	7120
Union Oil Co., Bell 58	500	5065

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
BECKHAM COUNTY—		
Carson et al, Denby 1, sw c ne 29-8-22w	*	1558
CARTER COUNTY—		
Carter Oil Co., Franklin 2, sw ne ne 24-1s-3w	1230	2017
Anderson, Eaves 5, nw ne sw 24-1s-3w	1965	2410
Magnolia Pet. Co., Hooks 4, ne sw ne 24-1s-3w	780	2059
Magnolia Pet. Co., Spigner 4, ne se nw 24-1s-3w	635	2423
Clark-Cowden and Ven Mex Oil Co., Miller 1, sw c ne 29-1s-3w	*	4246
CREEK COUNTY—		
C. O. Buckles, Grayson 1, se c sw 11-19-9e	90	1189
Phillips Pet. Co. et al, Carter 5, sw c ne se 20-19-9e	120	2160
Bryan Pet. Co., Taconey 2, se c nw sw 3-17-10e	*	2668
Murphy et al, Baker 2, nw ne ne 14-17-10e	*	2004
Beal, Plumb et al, Peen 1, sw se sw 23-18-9e	*	2803
J. H. Winemiller, Sapulpa 1, sw c se 33-18-11e	*	1980
Lynch et al, Brown 1, ne c sw nw 4-18-12e	*	2295
HARPER COUNTY—		
Sinclair O.&G., Howell 1, c sw sw 14-26-24w	50 bbls gasoline ¶12	5350
KAY COUNTY—		
Wentz, Westerman 1-G, c ne nw 8-28-1e	35	3384
John Hoasik, Barrett 2, se ne nw 7-28-1e	10	3308
Alco Royalty Co., Wolfe 1, se sw se 34-26-2w	¶4	4390
LINCOLN COUNTY—		
Atlantic Oil Prod. Co., Ryan 1, se c nw 5-14-6e	*	4675
MARSHALL COUNTY—		
Goddard Oil Co., Marshall 1, sw c se sw ne 8-6s-6e	*	752
NOBLE COUNTY—		
Empire O.&R., Fraler 1, sw nw ne 4-20-1w	¶30	3449

Tabulation and Comparison on page 96

Company, Well and Location	Initial Production Bbls.	Depth
Prairie O&G., Smyser 1, ne c se 5-20-1w	¶9¾	3415
Weaver and Cragin, Frederick 1, c sw ne 4-24-1w	*	2660
OKLAHOMA COUNTY—		
Denver Prod. & Ref. Co. et al, Harvey 2, cnl sw se se 15-11-3w	8545	6415
I.T.I.O. et al, Habegger 1, se c nw 14-11-3w (16 hr)	7080	6415
Cromwell-Franklin Oil Co., Trosper Park 20, ne nw sw 12-11-3w (16 hr)	15,222	6294
I.T.I.O. et al, Coppinger 7, sw c nw 11-11-3w (16 hr)	1690	6470
T. B. Slick Oil Co., Frost 1, se c 10-11-3w (16 hr)	2400	6455
I.T.I.O. et al, Wheland 1, se c nw ne ne 10-11-3w (16 hr)	7225	6445
Slick and Atkinson, Key 2, nw se sw 2-11-3w (8 hr)	930	6385
Gant and Garvin, Olafson 1, ne c nw sw sw 2-11-3w (8 hr)	3840	6271
Century Pet. Co., Jefferson 1, sw c nw ne ne 2-11-3w	24,265	6334
Anderson-Prichard Oil Corp., Orphanage 1, ne se nw 2-11-3w	2650	6290
I.T.I.O., M.K.T. 3, se sw sw 35-12-3w	12,400	6210
Tom Slick Oil Co., Banta 2, ne sw se 18-11-2w	*	5515
Tom Slick Oil Co., Banta 1, se sw se 18-11-2w	*	7555
Ryan Consolidated Oil Co., Lawton 1, ne c nw 3-11-2w	*	6903
OSAGE COUNTY—		
Continental Ref. and Prairie O.&G., 5, sw ne se 5-23-9e (20 hrs)	790	2099
Peters Pet. Co. and P. & R., 4, nw sw nw 11-26-8e	25	2157
J. E. Madden, 1, ne c se 15-21-8e	*	2490
PAWNEE COUNTY—		
J. M. Scott et al, Jones 1, sw c ne 22-20-5e	*	3824
C. O. Buckles et al, Jamison 1, nw ne se 13-20-9e	*	2898
Thompson and Black, Russell 1, nw ne nw 29-20-9e	*	2852
PAYNE COUNTY—		
Mote and Wheeler, Hermanstofer 1, ne c nw nw 9-17-5e	*	4134
POTTAWATOMIE COUNTY—		
Mid-Continent Pet. Corp., Archer 1, sw c se 14-6-3e	2725	3580
Gypsy Oil Co., Horn 1, sw nw ne 23-6-3e	2910	3450
The Texas Co., Knight 1, sw c se 3-8-3e	*	5407
SEMINOLE COUNTY—		
Burke-Greis, Henshaw 1, nw ne sw 30-8-8e	¶12	1435
Gypsy Oil Co., Ciker 4, ne nw sw 2-8-5e	1435	4170
Burke-Greis Oil Co., Patten 1, nw c sw 17-6-8e	*	4303
Hilton Phillips, Wisenhunt 1, sw ne se 35-7-5e	*	3350
TULSA COUNTY—		
Mays Drlg. Co., Marshall 5, cnl nw ne 15-19-15e	9	1381

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BARBER COUNTY—		
McPherson O.&G. Dev. Co., Rule 1, c w½ 10-33-13w	*	5163
BUTLER COUNTY—		
Hammer and McLean, Marshall 1, sw c 9-27-6e	*	3160
COWLEY COUNTY—		
Granlap et al, Stevens 1, se c ne 24-33-5e	¶1-1/5	584
Roth and Faurot, Brant 2-A, se sw ne 12-32-4e	¶1	722
Gralapp and Hall, Jarvis 2, nw c sw 19-33-6e	¶¾	600
MARION COUNTY—		
Magnolia Pet. Co., Lehran 1, se c nw 18-21-2e	*	3443
McPHERSON COUNTY—		
W. E. McPherson et al, Kuns 1, se c sw 11-20-5w	¶.02	1020
McPherson O.&G. and Shell, Fleming 1, c nw 11-19-2w	¶14	2907
Graham Bros., Rolander 1-A, se sw sw 30-18-2w	25	2340
RICE COUNTY—		
E. H. Lanston et al, Mowery 1, c ne 34-19-9w	*	3336
SEDGWICK COUNTY—		
Vickers Pet. Co. et al, Keys 4, nw sw ne 30-27-2e	1800	3251
Derby Oil Co., Eastborough 3, sw c ne nw ne 19-27-2e	1350	2976
Graham Bros. et al, Dennison 1, ne c 25-27-1e	25	3006
P. & R. et al, Turner 1, nw c se 30-27-2e	*	3342

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
Forest Oil Corp., Forest (1 well)	2	
Hyde & Beck, Hyde & Co. 1	2	
Bradford Producing Co., Bennett 1	4	
K. Schoonover, Schoonover 3	2	
L. P. Mullhaupt, Quintruple 1	2	
William Finley, Dempsey 1	3	
GREENE COUNTY—		
Duquense Co., Leslie 1	*	3385
ALLEGHENY COUNTY—		
Chartiers Oil Co., Clark 1	¶1	
BUTLER COUNTY—		
B. F. McDonald, McDonald 1	*	
Rabbitt & Co., Black 1	2	
CLARION-VENANGO COUNTIES—		
Plum Oil & Gas Co., Matthews 8	*	
Shaffer Oil Co., Oaks 1	*	
G. P. Myers, Myers 24	*	
Highfield & Co., Manley 28	2	

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
A. & E. Ashwood, Ashwood 4	2	
Forest Oil Corp., Forest (1 well)	2	
P. F. Shaner, Fairbanks 1	*	
M. J. Ball & Co., Ball 3	2	
Frank Homer, Homer 6	2	

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
CALHOUN COUNTY—		
M. F. Crowley, McDonald 1	¶¾	1999
C. B. Lewis & Co., Morris 2	¶¾	2156
F. F. McIntosh, Jarvis 1	¶¾	2218
W. H. Bickel, Hayhurst 3	¶¾	2049
BOONE COUNTY—		
The Pure Oil Co., Federal Coal 48	¶1	3041
G. L. Cabot Inc. Federal Coal 41	¶½	
Federal Coal 42	¶½	
ROANE COUNTY—		
Heck Oil Co., Smith 1	5	
W. H. Heiler & Co., Knopp 1	¶1½	1761
RITCHIE COUNTY—		
Rexroad & Robinson, McCumberledge 1	*	2031
Bachelor, Choquell & Co., Boyce 1	¶¾	2125
MARSHALL COUNTY—		
Twin Oak Oil & Gas Co., Pariett 1	2	3046
WIRT COUNTY—		
Groves Whitecotton, Jacks 1	1	
MARION COUNTY—		
Victor Tennant, Amos 1	¶¼	2880
FAYETTE COUNTY—		
G. L. Cabot Inc., Kanawha-Hocking Coal 5	¶¾	2436
KANAWHA COUNTY—		
United Fuel Gas Co., Black Band Coal & Coke 4067	¶1½	4600
WETZEL COUNTY—		
Hundred Oil & Gas Co., McDonald Hrs. 2	¶1	3324

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
S. M. Sirman, Atherton 7	80	....
George Engle, Yeiser 2	*	....
Jas. C. Ellis & Co., Gregory 2	*	....
OHIO COUNTY—		
D. J. White, Payne 2	10	....
George Randolph, Fuqua 1	¶¼	....
Cornell & Co., Sandidge 1	*	....
WAYNE COUNTY—		
Smith Cameron & Co., Coyle Hrs. 4	*	....
Bell 4	*	....
Harmon, Frank & Hanlon, Catron 5	*	....
ESTILL COUNTY—		
Humes & Wallace, Brinegar 2	*	....
Brinegar 3	2	....
Cox & Gabbard, Evans 4	10	....
HANCOCK COUNTY—		
D. T. Bolling, Crow 2	55	....
Cox, Ewell & Co., Bolling Sisters 1	¶5	....
JOHNSON-MAGOFFIN COUNTIES—		
Cumberland Petroleum Co., Bailey 44	20	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MORGAN COUNTY—		
Ralston & Maynard, McCarty Hrs. 11	2	1338
Ohio Fuel Gas Co., Embree 5	¶¼	1656
MONROE COUNTY—		
The Preston Oil Co., Johnson 3	*	2000
JEFFERSON COUNTY—		
Elliott & Co., Swartz 1	*	1250
WASHINGTON COUNTY—		
Ohio Fuel Gas Co., Lavelle 1	*	1264

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ASHLAND COUNTY—		
Trout & Co., Heifner 4	5	623
D'Lano & Co., Devault 3	*	737
Ohio Fuel Gas Co., Kick 1	¶1¼	....
Seuders 1	*	....
MUSKINGUM COUNTY—		
Wittmer Properties Trus. Riley 1	5	3153
The Preston Oil Co., Varner 1	145	3239
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., Stocker 4	¶½	1245
Brown 1	¶¼	3621
ATHENS COUNTY—		
Ohio Fuel Gas Co., Henderson 1	¶¼	1473
Carpenter & Glazier, Curtiss 13	*	90
MEDINA COUNTY—		
Ohio Fuel Gas Co., Woodward 1	*	....
Cammeron & Co., Cox 1	*	3208
RICHLAND COUNTY—		
Ohio Fuel Gas Co., Harris 1	*	....
Dunn 1	*	....
WAYNE COUNTY—		
Hulse & Kunditz, Firestone 1	¶1½	3078
HOLMES COUNTY—		
Ohio Fuel Gas Co., Campbell 1	¶¼	....
BELMONT COUNTY—		
A. C. Peters & Co., Wheatley 1	¶¼	1690
TUSCARAWAS COUNTY—		
Hopewell Oil & Gas Co., Meek 1	¶1¼	3663
STARK COUNTY—		
Penn Oil & Gas Co., Swigart 2	*	4079
PERRY COUNTY—		
Ohio Fuel Gas Co., Sunday Creek Coal 93	*	3623

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
WYANDOT COUNTY—		
Newcomer, Gregg & Co., Feeley 1	¶½	....
SANDUSKY COUNTY—		
Fremont Oil Syndicate, Baskey 1	¶¼	1677

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
SULLIVAN COUNTY—		
Thomas, Ellis & Co., Thomas 1	*	2320

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
LAWRENCE COUNTY—		
J. D. Toomey & Co., Harding 1	80	1648
Chas. Karns & Co., Ackman 1	*	1633
The Ohio Oil Co., Buchanan 48	*	1900
CRAWFORD COUNTY—		
John Phipps & Co., Funk 8	2	1032
The Ohio Oil Co., Randolph 1	*	1418
Porterville Oil Co., Coulter Hrs. 1	*	1610
CLARK COUNTY—		
R. E. Moffet & Co., Briscoe 7	1	....
ST. CLAIR COUNTY—		
Joe Weiss & Co., Phillips 1	*	545

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
ISABELLA COUNTY—		
Dixie Oil Co., Davis 8	500	3585
G-Lee-P Oil Co., Grubb 6	300	....
Isabella Oil Development Co., Bartlett-McClintic 1	¶7½	1300
Keeler-Mitchell 2	¶4	1350
Ohio Fuel Supply Co. & Co. Battle Hrs. 1	¶2	....
SAGINAW COUNTY—		
Smith Petroleum Co., Chase 1	*	2960

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
UNION COUNTY, (Smackover)—		
Root Ref. Co., Flenniken 7wo 6-16-15	25	1995
Flenniken 11wo 6-16-15	10	1998
UNION COUNTY, (Champagnolle)—		
Ohio Oil Co., Pumphrey 4, 12-17-14	1035	2996

LOUISIANA

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
RICHLAND PARISH—		
United Carbon Co., Williams 1, 33-16-6e	¶48¼	2460
Boughton 1, 1-16-6e	¶49	2445
UNION PARISH—		
Industrial Gas Co., Grayling 5, 28-21-4e	¶10	2108
Interstate Natural aGs Co., J. M. Edwards 1, 11-21-3e	¶3½	2221
WEBSTER PARISH (Sarepta)—		
Magnolia Pet. Co., Gardner 2, 1-22-11	25	2738

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BLACK BAYOU—		
Shell, Black Bayou State 1	900	5200
Watkins 15	1200	4400
EAST HACKBERRY—		
Calcasieu Oil Co., Watkins 21	150	3925
LAKE BARRE—		
The Texas Co., State Lake Barre 5, 30-21s-20e	1450	3820
LOCKPORT—		
Union Sulphur Co., Moss 2, 8-10s-9w	700	5290
NAPOLEONVILLE—		
Tex. Gulf Sulphur Co., Dugas & Le-Blanc 1	*	675
STARKS—		
Gulf, Lutcher-Moore 25	120	1245
SULPHUR—		
Union Sulphur Co., Fee 726, wo	1000	3675

TEXAS

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Yount-Lee, Woodward 9	780	5289
CLAY CREEK—		
Sun Oil Co., F. C. Marcus 1	360	1286
ESPERSON—		
Cranfill-Reynolds Co., Davis 6, 25 gravity	160	2335
HANKAMER—		
Gulf, Boyt 9, fluid 1117 bbls.	670	4005
MOORES FIELD—		
Gulf, Moore 25	615	4140
Moore 26	600	4025
HULL—		
Empire Barngrover 33	350	4150
Houston Prod. Co., Barngrover 15, dd	250	3880
NORTH DAYTON—		
Harrison & Abercrombie, Gulf Fee 1	1150	4805
ORANGE—		
Sun Oil Co., Gunstream 3, dd, pmg. 92 bbls. fluid	60	4280
Tillery Oil Co., Tasco 2, dd, pump.	20	3300
REFUGIO—		
Mission Drlg. Co., Shelton 1, nw townsite	1500	6450
Luling O. & G. Co., West 1, Blk 81	10	6470
SUGAR LAND—		
Humble, Nelson 11	700	3556
SARATOGA—		
Rio Bravo, Cotton 92-A	¶1	530
SPINDLE TOP—		
Yount-Lee, McFadden 52, dd, ppg. 120 bbls. fluid	7	2840
SOUTH LIBERTY—		
Sun Oil Co., Mitchell 24, dd	90	980

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BEXAR COUNTY—		
Penn-Tex Oil Co., Dobrowolski 3	¶2	....
Wm. M. Morgan, Brehm 1	8	640
Penn Oil Co., Cooksey 1	43	1410
DARST CREEK—		
Humble O&R Co., Denman 18-A	850	2592
The Texas Co., Posey-Baker 7	1300	2605
Wiley-Schmidt 2	800	2600
Magnolia Pet. Co., Kelin 3	500	2533
Humble Oil & Ref. Co., Denman 17-A	1500	2586
MAVERICK COUNTY—		
Rycade Oil Co., Chittim 5	¶12	2250
CHAPMAN—		
Anderson et al, Simmons 6-A	250	....
Bartlett & Wilson Steward 1	25	....
J. L. Collins, Lawrence 5	125	1462
ZAPATA COUNTY—		
O. W. Killam, Cuellar 31-C	100	1570
W. R. Shankle, Trevino 14	50	1291
Allied O & G Co. and Allen and Morris, E. Guittierez 11	90	1303
O. W. Killam, Cuellar 30-B	100	1590
Cuellar 27-A	20	1473
W. R. Shankle, Trevino 3	75	1298
S. R. C. Corporation, Cuellar 9-B	60	1224

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
North American O&G Co., Burnett (Sec. 98) 1,	¶52	2300
GRAY COUNTY—		
Danciger O&R Co., Morse 6	30	2702
Empire Gas & Fuel Co., Sailor 3	400	3243
Phillips Pet. Co., J. B. Bowers 3	15	3272
Skelly Oil Co., H. Schafer 22	310	3275
Vicars 1	300	3290

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
W. R. Cooper et al, Hamilton 1	*	1212
Kisk Oil Co., Lauster 1-B	10	1201
C. C. Williams et al, Herron 1	*	975
BAYLOR COUNTY—		
The Texas Co., Holman 1	*	2252
COOKE COUNTY—		
King & American Ref. Properties, Ball 1	*	3500
MONTAGUE COUNTY—		
Continental Oil Co.-Bridwell Oil Co., Cunningham 5-C	45	1269
Fleming & Kimball, Maddox 1	*	2140
WICHITA COUNTY—		
C. Everts et al, Volkart 1	*	2106
Lambert & Trout, Overby 10	45	1783
WILBARGER COUNTY—		
Lido Oil Co., Waggoner 7-C	5	2753
Southwestern Roy. Co., Waggoner 3-F	50	2457
YOUNG COUNTY—		
C. E. Beavers et al, Belknap 1	110	692
F-H-E Oil Co. et al, Davis 1	*	840
A. Goldsmith et al, Kunkel 1	*	1250
Grubbs et al, Weaver 1	*	860
Hamilton et al, Mills 1	*	750
Hynds & Parker, Epstein 1	*	2635
Long et al, Crow 1	*	2907
Martin & Maer, Jeffery 1	*	902
McDonald & Webb, Johnson 1	*	795
Sheldon & Shaw, Belknap 1	370	713
Stafford & Williams, White 1	*	652
The Texas Co. & Jas. McKanna, Jeffery 1-B	55	765
Jeffery 2-B	210	726
Thompson et al, Daws 2	*	1467
Wooten & Reed, Bryan 2	*	790
P. M. Yell & Son, Williams 1	*	644

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
COLEMAN COUNTY—		
Gant & Lamb et al, Audas 1	*	1640
EASTLAND COUNTY—		
Cranfill-Reynolds Co., Parker 1	¶3½	879
ERATH COUNTY—		
McCamey et al, Pair 1	*	3565
SHACKELFORD COUNTY—		
Gilman & McMurray, Herron 3	25	905

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Gulf Prod. Co. J. T. McElroy 84	715	2968
ECTOR COUNTY—		
Humble-Atlantic-Penn, Kloh 11-D	1335	3700
Simms Oil Co.-Phillips Pet. Co., University 4	725	3731
PECOS COUNTY—		
Curry & Eakin, Pecos Valley 1	15	1629
UPTON COUNTY—		
Gulf Prod. Co., King et al 1	45	2742
WARD COUNTY—		
Texas Pacific Coal & Oil Co., M. Barker 1	150	2425
WINKLER COUNTY—		
Prairie O&G Co., Johnson 1	100	3140

(Continued on Page 136)

PERMITS GRANTED FOR NEW WELLS

CALIFORNIA

BELRIDGE—The Texas Co.'s J. D. Martin 1, 22-27-20.

ELWOOD — Caroline C. Spalding's Blue Goose 93-5, 16-4-29.

KERN RIVER — California Star Oil Co.'s No. 1-40, 22-28-27.

KETTLEMAN HILLS—Superior Oil Co.'s Huffman 2, 29-21-27. Richfield Oil Co.'s Signal 1, 36-21-17.

LONG BEACH—Richfield Oil Co.'s Bernstein 6, 19-4-12. Fred G. Delaney Trust's Trust 1, 19-4-12. Shell Oil Co.'s Babb and Tucker 7, 29-4-12. Dabney-Johnston Oil Corp.'s No. 83, 18-14-12.

LOS ANGELES COUNTY — Bardeen Pet. Co.'s Puente 2, 2-2-10.

MIDWAY — Chanslor-Canfield Midway Oil Co.'s No. 88, 8-32-23.

PLAYA DEL REY—Clark Oil & Royalties Corp.'s No. 3, 21-2-15. Coloma Oil Corp.'s Coloma 2, 21-2-15. Island Pet. Corp.'s No. 1, 28-2-15. Speedway Oil Co.'s Bradley-King 1, 21-2-15. Venice Consolidated Oil Co.'s No. 1, 21-2-15. Wood Pet. Corp.'s No. 1, 28-2-15. Barnsdall Oil Co.'s Burks 9, 28-2-15; Burks 10, 28-2-15; Burks 12, 28-2-15. Beaudette Dunn Pet. Co.'s No. 1, 28-2-15. Clark Oil & Royalties Corp.'s No. 2, 28-2-15. L. H. Freeman's No. 2, 28-2-15. Pan California Oil Corp.'s No. 10, 28-2-15. Pan. Gulf Pet. Co.'s No. 4, 28-2-15. Santa Catalina Oil Co.'s No. 1, 28-2-15. George Wolfe's No. 4, 28-2-15.

SANTA BARBARA COUNTY — Palisades Pet. Corp.'s No. 2, 28-4-27

KANSAS

COWLEY COUNTY—Martin et al's Glacken 1, c se se 23-32-4e.

McPHERSON COUNTY—Rush, Graham & Shell's Robinson 1, c se sw 10-19-2w; United Pet. Shell Pet. & Sinclair O&G's Kaegi 1, ne c 20-19-1w.

RENO COUNTY—Study, Turner and Frost Drlg. Co.'s Haury 1, se c nw 1-23-4w.

SEDGWICK COUNTY — Roy Ramsey's Davies 1, sw c 17-27-2e; Graham Bros. & Shell's Bogue 1, (owdd) se c sw se sw 15-26-2e; Jones and Shell's Lygrisse 1, ne c sw 15-26-2e; Schwartz et al's George 1, nw c ne sw nw 19-27-2e.

OKLAHOMA

BRYAN COUNTY—M. A. Neff et al's Farris 1, c s½ s½ 29-6s-7e.

CADDO COUNTY — Magnolia Pet. Co.'s Lindsey 8, (owdd) ne nw se 36-6n-10w.

CARTER COUNTY — Magnolia Pet. Co.'s Dickerson 2, sw se ne 24-1s-3w.

CREEK COUNTY—Thompson and Penrod's Perryman 1a, nw c se 1-14-11e; Jackson & Wise, Folsom 9, cnl ne ne 9-16-11e; J. H. Wright Estate's McKellop 1a, ne c se sw 23-17-10e; L. A. Carpenter's Cloud 6, sw c ne sw 22-17-11e; I.T.I.O.'s Hinton 3, ne c sw sw 25-19-8e.

HUGHES COUNTY — Gilcrease Oil Co.'s Deere 1, ne c sw 20-6-9e.

KAY COUNTY—Mumner et al's Sornick 1, nw se 9-27-2e.

LINCOLN COUNTY—Parkening, Watts and others, Grant 1, nw c ne 32-17-4e.

MARSHALL COUNTY—Bilbo Oil Corp.'s Taliaferro 16, ne c nw ne se 14-5s-5e; J. C. Doss et al's Taliaferro 1, sw c nw sw ne 4-6s-6e.

McINTOSH COUNTY — Gaines Creek Gas Co.'s Smith 1, se c ne 5-8-16e.

MUSKOGEE COUNTY—Art Deegan et al's Musgrove 1, c se sw 7-12-19e; Bradley, Sango 1, sw c se 12-15-17w; Western Devel. & Elec. Co.'s Murrell 2, sw c 4-15-18e; Patton's Robinson 1, ne c sw 30-15-19e.

OKLAHOMA COUNTY—F. C. Hall's Kelsey 1, nw c se sw nw 10-11-3w; Dingeil Oil Co. 1, nw c se ne 10-11-3w; Johnson and Dabney 1, ne c nw se ne 10-11-3w; Phillips Pet. Co.'s Sam 1, ne c sw se ne 3-11-3w; Wood Bros. 1, sw c ne sw sw 2-11-3w; Blackwell O&G and Jones Drlg. Co.'s Garr-Gain 1, nw c se nw se 35-12-3w.

Tabulation and Comparison on page 96

OKMULGEE COUNTY—Kirkland & Son's Brown 2, cnl sw sw 9-15-13e; Kirkland & Son's Brown 3, (twin) cnl sw sw 9-15-13e; Tiffany Bros.' Shoals 1, se c nw 25-16-11e.

OSAGE COUNTY—I.T.I.O. 440 ne c se sw nw 5-26-12e; L. R. Twyman et al, 2, ne sw sw 21-27-11e; L. G. Stanley et al, 1, se e sw 4-28-7e.

PAWNEE COUNTY — Bryan Pet. Co.'s Johnson 2, (owdd) ne c se 27-20-9e.

PONTOTOC COUNTY — Dixie Oil Co.'s Buck 1, sw se ne 32-5-5e.

SEMINOLE COUNTY — Burke-Greis Oil Co.'s Henshaw 2, nw ne sw 30-8-8e; Deep Rock Oil Corp.'s Douglas 1 "B", ne c sw 30-8-8e; Deep Rock Oil Corp.'s Douglas 2, sw c ne 30-8-8e; Deep Rock Oil Corp.'s Johnson 2, sw ne ne 30-8-8e; Empire O&R,'s Dameron 2, sw se nw 20-6-6e.

STEPHENS COUNTY—Floyd Jones et al's Toney 1, sw c nw se 27-2s-7w; Pace et al's Dilley 3, se c ne nw se 27-2s-7w; Carl Wiley's Spiegel 1, sw c ne ne 10-2s-5w; Sykes et al's Kirk 1, nw c se 16-1s-8w.

TULSA COUNTY — Preston et al's Perryman 1, ne c nw nw 4-17-14e; Jones et al's Grayson 1, ne c se nw 1-19-10e; Gallo Bros.'s Bruner 1, ne c sw 1-19-14e.

WAGONER COUNTY—J. P. Flanagan 1, ne c 17-16-19e.

TEXAS

ARCHER COUNTY — Shappell Oil Co., Wichita Falls, J. L. Jackson, 278, 49, No. 4, DCSL sur, 850 ft from e and 750 ft from s line.

ANDERSON COUNTY — Humble O&R Co., Houston, J. W. McCaffrey, 784, 1, No. 3, I&GN sur, 660 ft from w and 680 ft from s line.

BAYLOR COUNTY—L. T. Burns, Wichita Falls, W. B. Mills, 160, 1, 3137, TE&L sur, 1199 ft from s and 1161 ft from w line of sec.

BEE COUNTY—Moody-Seagraves & Independent O&G Co., San Antonio, B. Welder, 5491, 1, H. Eyles sur, 8150 ft from e and 6280 ft from s line. Texas Co., Houston, S. R. Bridges, 250, 1, T. Duty sur, 150 ft from n and e lines.

BELL COUNTY—O. O. Alford, Temple, F. Spanhel, 20, 1, Woodford sur, 150 ft from n and w lines.

BEXAR COUNTY—Penn-Tex Oil Co., San Antonio, P. Dobrowolski, 67, 3, No. 52, blk 4, 620 ft w of No. 1.

BRAZORIA COUNTY—Mills Bennett Prod. Co., Houston, J. T. Reese, 420, 2, Alley sur, 550 ft from se and 275 ft from river. E. Randon, 100, 2, C. G. Alsbury sur, 860 ft from ne and 100 ft from nw line.

BROWN COUNTY—Gtzoff, Zephyr, M. Coffee, 200, 1, W. H. Wharton sur, 150 ft from n and w lines.

CALLAHAN COUNTY — Grassroots Pet. Co., Fort Worth, G. W. Klutz, 240, 10, S 181, 750 ft from n and 150 ft from w line.

CASS COUNTY—Texas Co., Shreveport, Citizens Bk., 124, 1, J. Watkins sur, 300 ft from n and 2793 ft from e line of sur.

COLEMAN COUNTY—Meredith & Horrman, Cisco, J. P. Morris, 160, 1, S 190, Alexander sur, 460 ft from e and 350 ft from s line. Prairie O&G Co., Ranger, V. E. Burns, 196, 1, S 17, A. White sur, 200 ft from n and w lines. Midland Oil Co. et al, Fort Worth, A. J. Reeves, 80, 1, No. 631, H. Rhodes sur, 1926 ft from s and 1888 ft from w line sur. Guffy Bros. & Dobb, Baird, Peggie, 225, 1, S 275, B. Alderata sur, se corner.

COOKE COUNTY — W. B. Hamilton, Wichita Falls, Shipley, 80, 1, M. Hunt sur, 150 ft from e and 1050 ft from s line. Faith Oil Corp., Wichita Falls, P. Purcell, 46, 1, C. F. Stanley sur, 150 ft from n and w lines. D. L. Edmiston, Tulsa, H. Henscheid, 80, 1, S 1116, F. P. Whiting sur, 150 ft from n and e lines.

CLAY COUNTY—Ray Dawson, Oklahoma City, P. Boddy, 71, 1, B 33, ACSL sur, 800 ft from n and 150 ft from e line; J. Bachman, 50, 1, B 75, PCSL sur, 150 ft from s and w lines; J. Mosier, 125, 1, B 74, PCSL sur, 200 ft from n and 950 ft from e line; Brown Est., 80, 1, PCSL sur, 150 ft from n and 1320 ft from w line, blk 81. Saxet Oil Co., Petrolia, Culbertson, 3, B 14, PCSL sur, 150 ft from n and e lines, lot 10; 4, same sur, 150 ft from n and w lines of lot 9; D. S. Ross, 8, B 27, PCSL sur, 720 ft from n and 240 ft from w line.

CHAMBERS COUNTY—Sun Oil Co., Beaumont, Z. Wilburn, 20, 13, Wm. Hodge sur, 150 ft sw of No. 10. Mills Bennett Prod. Co., Houston, E. W. Barber, 12½, B 1, H. Griffith sur, 197 ft from ne and 50 ft from nw line.

DAWSON COUNTY—R. A. Albaugh, Big Spring, J. Robinson, 1, S 46, B M, EL&R sur, center of nw¼.

DUVAL COUNTY—S. R. & C. Oil Corp., San Antonio, Duval Ranch, 640, 1, S 293, B 3, 475 ft w of center of e line; 2, 848 ft sw of No. 1. Vacuum Oil Co., Houston, Duval Ranch, 640, A1, S 280, GC&SF sur, 1580 ft from e and 2160 ft from s line sec. Humble O&R Co., Houston, Kohler, 50A, S 164, M. E. Gussett sur, 2805 ft from n and 165 ft from n line.

EASTLAND COUNTY — Lone Star Gas Co., Dallas, B. P. Cozar, 160, 1, S 478, S. P. Ry sur, 400 ft from e and 336 ft from n line. W. E. Hormer et al, Ranger, W. L. Dooley, 30, 1, S 5, B 4, H&TC sur, 150 ft from n and e lines. Hickory Oil & Gas Co., Fort Worth, C. H. Fee, A, 162, 1, S 77, B 4, H&TC sur, center of nw¼.

GRAY COUNTY—H. H. Sanders, Amarillo, R. Sullivan, 160, 2, S 136, B 3, I&GN sur, 990 ft from w and 330 ft from n line of ne¼; 1, 330 ft from n and w lines of ne¼.

GRAYSON COUNTY—F. H. E. Oil Co., Sherman, D. R. Utiger, 160, 1, P. P. Cady sur, 880 ft from w and 150 ft from s line.

GONZALES COUNTY — United North & South Dev. Co., San Antonio, C. M. Wells, 185, 1, Jas. Johnson sur, 450 ft from ne and nw lines.

GUADALUPE COUNTY—Louisiana O&R Corp., Shreveport, T. Dix, 50, 8, J. W. Robinson sur, 620 ft from se and 664 ft from ne line; 9, same sur, 1130 ft from se and 614 ft from ne line.

HARDIN COUNTY—Rio Bravo Oil Co., Houston, Fee, 158, C100A, J. F. Cotton sur, 200 ft n of No. C92.

HARRIS COUNTY — Rolyat Prod. Co., Humble, Landslide, 4, B 70, R. Dunman sur, 150 ft w of No. 2.

HUTCHINSON COUNTY — Prairie O&G Co., Ranger, Johnson, A, 69, S 28, B Y A&B sur, 330 ft from n and e lines; 70, same sur, 330 ft from s and w lines.

JEFFERSON COUNTY—Estelle Oil Co., Beaumont, Fee, 2, Gladys-J. A. Veatch sur, 80 ft from n and e lines of blk 21.

KIMBLE COUNTY—Kamon & Mudge Oil Co., Fort Worth, N. Hodges, 630, 1, S 27, G. Kimble sur, 600 ft e of center of w line.

MILAM COUNTY—Texas Co., Houston, F. W. Moore, 243, 1, Acosta sur, 150 ft from s and w lines.

MONTAGUE COUNTY—J. H. Howell et al, Electra, D. E. Cunningham, 50, 1, T. R. Edmondson sur, 200 ft from s and 150 ft from w line.

NUECES COUNTY—Moody-Seagraves Oil Co., San Antonio, F. J. Smith, 120, 1, B 314, R. J. Dunn sur, 450 ft from n and e lines.

PECOS COUNTY—Dixie Oil Co., Inc., McCamey, J. H. Tippett, 5, S 61, B 194, A&B sur, ne corner. McCarty Oil Co., Wichita Falls, A. A. Gray, 3, S 591, GC&SF sur, west central part of lease.

RUSK COUNTY—L. L. Smith, Inc., Re-

NEW WELL CLEANING PROCESS ASTONISHES PRODUCTION MEN

Boosts Production of Pumping Wells as High as 300% at Very Low Cost Per Well

WELLS SERVICED ON FEE BASIS

Many Major Companies and Independents Contracting Wells After Convincing Demonstrations

Increasing the production of pumping wells from 100% to 300%, at very small cost per well, is the remarkable achievement of a new well cleaning device and process recently made available to the Oil Industry, on a moderate service fee basis, by The Morris Company. Of more than forty Gulf Coast and West Texas wells treated by the Morris Process since the first demonstrations were made several months ago, only two have failed to respond with at least 100% increase in production. The Company now has skilled field crews operating in Texas and Oklahoma, Louisiana and Arkansas, and as rapidly as possible will make its services available in all sections of the oil country.

Amazing Results Recorded

The first demonstration of the new Morris Well Cleaning Process, made several months ago after months of shop testing, was in the South Liberty Oil Field in J. E. Teddlie's No. 1 Community. This well was producing below 5 barrels per day. After treatment it increased to 32 barrels per day and averaged this amount for three months. It is to be treated again soon.

Five wells have been treated for the Fort Bend Oil Company, Houston, Texas, in the Blue Ridge and South Liberty fields. At Blue Ridge one well increased from 5 barrels to 45 barrels; another increased from 0 to 35 barrels; another from 8 barrels to 15 barrels, and the fourth from 20 barrels to 45 barrels. At South Liberty, one well increased from 12 barrels of fluid to 100 barrels of fluid.

At Sour Lake, Texas, one well treated for J. F. Brashara increased from 12 barrels to 22 barrels and held this figure for three months.

At Edgerly, Louisiana, one well treated for the Associated Oil Company had been abandoned. After treatment it made two heads of oil before the tubing could be removed.

At Humble, Texas, one well was treated for the West Production Company. It had been abandoned, but after treatment is making 90 barrels of fluid with oil showing.

At Wichita Falls, Texas, three wells were treated for the W. T. Waggoner Estate. One of these wells had just been shot with 160 quarts of nitroglycerine with no appreciable increase. Each of the wells, after treatment by the Morris Process, increased from 100% to 300%.

Process Fully Proved

The Morris Well Cleaning Process is Fully Proved. It has an enviable record of almost 100% success behind it, and has won innumerable staunch friends among the biggest production men in the Gulf Coast. After convincing tests on their own wells, these men have contracted for the treatment of other wells for their companies, both majors and independents.

Full Data Gladly Mailed

To production men and oil company executives interested in substantially increasing their production by utilizing the latest and most scientific process yet devised, The Morris Company will gladly mail full details of its well cleaning device and process. There is no obligation whatever. The process is simple and safe to use in any well, and absolutely can not leave anything in the hole. Based on its past performance on more than forty wells, it is almost a sure bet that production of your wells can be boosted as high as those treated thus far. The cost is relatively low. Prices are furnished on request.

Mail the coupon below, or write, wire or 'phone to the address given below.

MAIL this coupon for full data and prices

THE MORRIS COMPANY,
Box 4176, Houston, Texas.

Gentlemen:—

Please forward full details of your well cleaning process, together with prices, without obligation.

NAME .....

COMPANY .....

POSITION .....

ADDRESS .....

The MORRIS COMPANY

P. O. BOX 4176 HOUSTON, TEXAS

Phones: Capitol 1664 and Preston 0920

fugio, Cooper, 5, 1, J. Ximines sur, 150 ft from s and w lines.

SHACKELFORD COUNTY—P. S. Kendrick, Albany, Martin, 11, 2, S 1, Bayland Asy. sur, 100 ft from s and e lines. Hyde & James, Albany, Morris 80, 1, S 200, E. T. Ry. sur, 226 ft from w and 220 ft from s line of sec. Lynch, Welch & Stout, Albany, B. F. Lynch, 160, 1, S 9, Blind Asy. sur, 500 ft from n and 1320 ft from w line se¼. Stroud & Ervin, Albany, P. E. Thorp, 80, 1, B 7, Blind Asy. sur, 150 ft from w and 300 ft from s line. E. W. Bateman, Fort Worth, T. E. Hayden, 40, 1, S 1115, Univ. Lands sur, 660 ft from n and w lines nw¼ of ne¼.

TOM GREEN COUNTY—W. C. Pratt, San Angelo, G. W. Lewis, 182, 1, No. 2, Joshua sur, 1350 ft from n and 518 ft from w line.

VAN ZANDT COUNTY — Pure Oil Co., Fort Worth, I. W. Thompson, 95, 1, M. Gross sur, 1820 ft from ne and 223 ft from se line; R. E. Cade, 50, 1, A. McPhail sur, 225 ft from n and 628 ft from w line; G. C. Stewart, 50, 2, A. McPhail sur, 250 ft from n and 225 ft from e line.

WICHITA COUNTY—J. C. Cunningham, Graham, W. D. McClure, 76, 8, S 5, GC&SF sur, 600 ft from w and 460 ft from s line; 9, same sur, 300 ft s of No. 8. Schlaffke & Blair, Electra, W. B. Honaker, 36, 3, B 1, C&M sur, 1050 ft from n and 450 ft from w line. Lomax, Inc., Wichita Falls, Kemp-Kempner, 22, 1, B 76, WVFL sur, 150 ft from n and w lines. F. C. Baldwin et al, Fort Worth, Kennedy, 160, 34, S 6, GC&SF sur, 150 ft from n and e lines. Dr. C. W. Wallace, Wichita Falls, Fee, 167, 48, WVFL sur, 300 ft s of No. 40. Burr Lambert, Wichita Falls, W. W. Overby, 80, B1, J. M. Sharp sur, 150 ft from n and e lines. Walton, Blair & Schlaffke, Electra, W. B. Honaker, 20, 4, B 1, C&M sur, 450 ft from n and w lines of sur.

WILLIAMSON COUNTY — Williamson County Pet. Co., Fort Worth, L. Kilgore, 50, 7, S. Miller sur, 150 ft from ne and 100 ft from s line; 8, same sur, 450 ft from e and 150 ft from s line.

YOUNG COUNTY—E. R. Riggs, Graham, J. M. Kirkland, 35, 2, 2249 TE&L sur, 1350 ft from n and 1065 ft from w li of sec. E. D. Willis, Jean, J. M. Kirkland 9, 1, 2249 TE&L sur, 35 ft e of center of w line. Martin Maer et al, Wichita Falls, S. R. Jeffery, 260, 1, 50 TE&L sur, 150 ft from s and e lines. Compton & Hamilton, Olney, S. Davis, 100, 1, S. Davidson sur, 450 ft from e and 600 ft from s line. Petit, Murray & Kleiner, Cisco, Graham, 112, 2, 2249 TE&L sur, 300 ft e of No. 1. King Royalty Co., Wichita Falls, J. M. Kirkland, 29, 1, 2249 TE&L sur, 150 ft from n and e lines E. R. Riggs, Graham, J. M. Kirkland, 35, 1, 2249, TE&L sur, 1350 ft from n and 1365 ft from w line of sec. Geo. Mollenkopf, Olney, J. F. Larimore, 80, 5, 2247, TE&L sur, 450 ft from s and 150 ft from w line; S. L. Ellis, 80, 5, 2244, TE&L sur, 710 ft from w and 150 ft from s line. Alex Goldsmith, Wichita Falls, V. W. Kunkel, 50, 1, 174, TE&L sur, 150 ft from n and 450 ft from w line. Watson & Week, Newcastle, Heard, 120, 1, 701, TE&L sur, 600 ft from w and 400 ft from s line. W. T. Brazleton et al, Olney, C. E. Pool, 40, 1, 622, TE&L sur, 150 ft from s and w lines. Shaw Oil Co. & Sheldon, Wichita Falls, Belknap, 40, 1, 22, TE&L sur, 150 ft from n and w lines.

ZAPATA COUNTY—S. R. & C. Oil Corp., San Antonio, E. Trevino, 40, 5B, S 65, B 10, 450 ft from n and 150 ft from w line blk 10; E. Trevino, 40, 9B, S 65, 450 ft from w and 150 ft from s line blk 7.

LOUISIANA

ASSUMPTION PARISH—Gulf Refg. Co. of La., Plaquemine, J. A. Landry 2, 42-12s-13e, 975 ft w and 1230 ft s of ne cor of sec.

DE SOTO PARISH—G. D. Neff & W. H. Harper, & I. N. Pharis, Shreveport, H. P. Dowling 1, 18-13n-14w, 240 ft from e line and 240 ft from s line of sec. Standard Oil Co. of La., Shreveport, Dowling Bros. B-1, 32-14n-13w 200 ft n and 396 ft w of se cor sw¼ of sw¼.

RICHLAND PARISH — Palmer Corp. Shreveport, Holdiness 1, 8-16n-6e, 551.8 ft s and 2215.6 ft w of ne cor of sec. Southern Carbon Co., Monroe, Thomason E-1, 32-16n-6e, 3300 ft s and 100 ft e of nw cor of sec. State Line Oil & Gas Co., Houston, I. Hewitt 1, 32-16n-6e, 1721 ft s and 957 ft e of w¼ cor of sec.

SABINE PARISH—Mr. W. M. Coates, Shreveport, Sabine Lbr. Co. 1, 1-7n-12w, 424 ft from sw cor of nw¼ of sw¼. Mr. R. L. Gay, Tr., Zwolle, Peterson 1, 31-8n-12w, in lot 1, blk 16, of Zwolle townsite. Lacy Prod. Co., Shreveport, W. M. Cooper 1, 30-8n-11w, 330 ft n and 330 ft e of center of sec. A. H. Teat, et al, Shreveport, Craig 1, 25-8n-12w, 142 ft n and 330 ft e of sw cor ne¼ of ne¼.

ST. MARTIN PARISH — The Texas Co., Shreveport, Iberville Ld. Co., Fee 3, 30-7s-7e, 4250 ft southwesterly along n line from ne cor of sec 30 and 660 ft southeasterly at rt. angles.

ARKANSAS

LOGAN COUNTY—Ark-La. Pipe Line Co.'s Jno. Jansen 1, 350 ft s, 455 ft e nw cor ne¼ ne¼, 35-8-24.

COMPLETIONS

(Continued from Page 133)

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
VAN ZANDT COUNTY—		
Humble O&R C., Mrs. E. E. Carroll 3	5500	2938
Pure Oil Co., J. F. Crim (40-ac) 1	75	2981
D. O. Mayo (29.5-ac) 1	5000	2951
Mrs. M. F. Shirley (38-ac) 2	4000	2956
G. C. Stewart (50-ac) 1	3500	2946
Mrs. W. A. York (50-ac)) 1	4500	2922

NEW MEXICO

LEA COUNTY—		
Amerada Pet. Corp., State 3-B	¶12-19,665	4191
Atlantic Oil Prod. Co., Grimes 1	¶3-3075	4242
Humbel O&R Co., Bowers 10	¶11½-16,095	4220
State 1-A	¶13¾-17,300	4215
Midwest Ref. Co., McKinley 1	¶8½-9525	4190
Sun Oil C., McKinley 3	¶10-8810	4175

Market—Wise

(Continued from page 39)

AN irregular price situation prevails in the Gulf Coast, with indications that the three leading producing and purchasing companies have different views as to crude values. Humble Oil & Refining Company initiated the price cut on October 28, and was met on the same day by The Texas Company, except that the latter continued to post 44 gravity and above prices for Grade "B." Gulf Pipe Line Company delayed revising its price schedule until October 30, when a cut of about 20 cents per barrel below the new prices of the above two majors was placed in effect.

Considerable interest is attached to this move by Gulf Pipe Line Company, as the company is known to have been opposed to a deep price reduction in West Texas, where Gulf Production Company is producing about 38,000 barrels of oil daily. The West Texas price cut was initiated by Humble Oil & Refining Company, and the latter is producing only a small percentage of its crude takings from West Texas areas, while a large portion of same is sold to Atlantic Coast refiners. Gulf Pipe Line Company fell in line with lower prices in West Texas after the majority of purchasers met Humble Oil & Refining Company's new scale.

IN the event Gulf Pipe Line Company's Gulf Coast price schedule is adopted by others, this grade of oil can be expected to mount in demand, and displace a portion of the tanker sales of West Texas crudes now made from Gulf Coast points. Most of the West Texas crude reaching the coastal market is about 30 gravity, which is posted at 62 and 67 cents, with the latter price applying to Winkler and Pecos crudes only, and the average transportation cost is 52½ cents f.o.b. tanker. The same gravity of Gulf Coast "B" crude is quoted by Gulf Pipe Line Company at 81 cents, with a transportation advantage of 10 to 30 cents per barrel over West Texas oils. Prior to the October price cuts Grade "B" 30 gravity oil was $1.18, and all West Texas crude of same gravity was 83 cents, but the difference in transportation costs made the two about even. Humble Oil & Refining Company is by far the largest marketer of Texas crudes, and is usually accepted as the leader in revising the price structure in nearly all fields in the state.

North Belridge Well Shows Increase

Taft, Calif.—Belridge Oil Company's Fee 15, discovery well in the Temblor zone in the North Belridge field, has steadily increased its production to 3000 barrels of 46 gravity oil from 5457 feet, such a performance placing the new producer in a very select class. The oil is clean, showing the minimum cut of one-tenth of one per cent. Production declined to about 2400 barrels immediately following completion, but the subsequent climb to a point well above the initial has dispelled any fear that the sand will not produce satisfactorily. Richfield Oil Company is drilling at 5375 feet in Belridge 1, Section 22-27-20, and there is still doubt as to whether the Temblor zone has been found. A formation encountered at about 4900 feet was classified as the Temblor sand, but deeper drilling has not definitely proved the accuracy of the original decision. This well is located about one and one-half miles from the discovery well.

WILDCATS FROM ALL SECTIONS

WEST TEXAS

Completions

PECOS COUNTY—
Lockhart & Co., University 1 .... * 2100
TAYLOR COUNTY—
Gibson-Johnson et al, Bingham 1 ... * 2501

ANDREWS COUNTY—Deep Rock Oil Co. et al's Kuykendall 1, materials. Fuhrman Pet. Corp.'s W. T. Ford 1, elev 3186 ft, cased off 20 mil ft gas 4062-68 ft, flowing 150 bbls oil daily 4290-4610 ft.

BREWSTER COUNTY—Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, sd 2510 ft.

CONCHO COUNTY—Beesley et al's Waring 1, sp and sd. A. W. Turner et al's Brosig 1, sd 1520 ft.

CRANE COUNTY—Cranfill Bros. Oil Co. et al's J. T. Muir 1, elev 2499 ft, top salt 485 ft, top white lime 2330 ft, dr lime 3700 ft. Cranfill & Gulf Prod. Co.'s J. B. Tubb 1, elev 2526 ft, salt 505 to 1400 ft, top brown lime 1415 ft, top white lime 2455 ft, fsh tools with light spray oil 4303-4488 ft.

CROCKETT COUNTY—John W. Dieringer et al's G. Banscorew 1, spd. Magnolia Pet. Co.'s A. C. Hoover 2, elev 2521 ft, top salt 865 ft, top lime 1850 ft, pumping 10 bbls 31 gravity oil 2038-56 ft. Taylor-Link Oil Co.'s Mary Bullock 1, sp.

CULBERSON COUNTY — Grisham-Hunter Corp.'s W. D. Garen 2, sd 1520 ft. W. L. Kornrumpf et al's Garen 1, sd 1025 ft.

DAWSON COUNTY—Ray Albaugh et al's John Robinson 1, std rig.

ECTOR COUNTY—C. P. Davis et al's T. G. Hendrick 1, elev 2878 ft, top salt 1640 ft, top brown lime 4470 ft, dr 4565 ft. H. F. Wurtz et al's Ibbetson 1, elev 2840 ft, top salt 865 ft, dr 2745 ft.

EDWARDS COUNTY—Phillips Pet. Co.'s Helman 2, fsh 6325 ft.

FISHER COUNTY — Condor Pet. Co. & Humble O&R Co.'s Wilson 1, elev 1879 ft, dr 710 ft. Cranfill-Reynolds Co.'s Flannigan 2, sd 3130 ft; Willingham 3, sd 3090 ft. The Texas Co.'s Dan W. Stephens 2-A, dr 1060 ft; M. Teagarden 2-B, dr 1625 ft.

GAINES COUNTY—Texas Consolidated Oil Co. & T. P. Coal & Oil Co.'s E. H. Jones 1, lcn.

GLASSCOCK COUNTY—F-H-E Oil Co. et al's J. W. Meek 1, spd. Ed. Timberlake et al's Meek 1, sd 2965 ft. World Oil Co.'s McDowell 3-c, sd 600 ft.

TOM GREEN COUNTY—Belding & Dutton's Norsworthy 1, sd 765 ft. Mintex Oil Co.'s Campbell 1, sd 1835 ft. Phillips Pet. Co. et al's Jennings-Gulden 1, elev 2016 ft, dr 4990 ft. Pratt & Hancock's Lewis 1, dr 210 ft.

HOWARD COUNTY—Greene Prod. Co. & Getty Pet. Corp.'s Denman 1, elev 2280 ft, top lime 1700 ft, pumped 70 bbls oil first 15 hrs. at 2447-2785 ft; Snyder 1, elev 2314 ft, top lime 1790 ft, dr 2210 ft.

HUDSPETH COUNTY—G. R. Theison et al's University 1, sp and sd.

IRION COUNTY — Central Oil Co.'s H. Horney 2, dr 550 ft. Carl Cromwell et al's Tankersley 1, elev 2520 ft, sd 1712 ft. Straughn & Texannati Oil Co.'s Tankersley 1, sd 1331 ft. F. E. Webb et al's Williams 1, elev 2363 ft, sp and sd. P. H. Williams et al's Noelke 1, sd hfw 1995 ft.

JONES COUNTY—McBest et al's Roberts 1, sd 1000 ft. C. H. Pope et al's Swann 1, dr 2510 ft.

LOVING COUNTY — Arkansas Fuel Oil Co.'s W. W. Dean 1, top salt 775 ft, dr 3750 ft. The California Co.'s Reagan-McIlvain 3, elev 2687 ft, top salt 726 ft, top Delaware 4201 ft, flowing 90 bbls natural 4220-26 ft; Reagan 5, top salt 770 ft, dr 990 ft; Reagan 6, dr 290 ft. A. R. Eppenauer Drlg. Co. et al's Allen 1-A, top salt 850 ft, dr 2295 ft. Henshaw et al's Reagan-McIlvain 2, materials. Lewis & Slagel Drlg. Co.'s Cartwright 1, rig. Miller-Burge & Healy's Chapman 1, top salt 750 ft, sd 3800 ft. Phillips Pet. Co.'s Wheat 2, top salt 775 ft, dr 2490 ft. Rush-Anderson & Moor's Jim Wheat 1, dk.

MENARD COUNTY—W. C. Barnett et al's Callan 3, sd 1810 ft; Callan 4, lcn. L. G. Priest et al's J. P. Sorrells 1, elev 2279 ft, sd 2520 ft.

MIDLAND COUNTY—Kirwin et al's Mathena 1, sd 1230 ft.

MITCHELL COUNTY — Lewis & Slagel Drlg. Co.'s A. M. Bell 1, ur 565 ft.

PECOS COUNTY—J. R. Bell et al's H. J. Eaton 1, lcn; Scharff-Blackman 1, dr 640 ft. Charlesworth-Messenger Oil Co.'s Butz 1, fsh 1105 ft. E. L. Chapman et al's Streety 1, elev 2653 ft, sd 2210 ft. Crosby Prod. & Roy. Corp.'s Cordova 1, flowing sulphur water, dr 2945 ft. C. L. Dittman Drlg. Co. et al's Eaton 1, elev 2428 ft, top salt 865 ft, sd flowing 50 bbls 1574-80 ft; Eaton 2, lcn; Eaton (Sec. 37) 1, machine; Jackson 1, lcn. Humble O&R Co.'s H. L. Kokernot 1, elev 3593 ft, top salt 2713 ft, top black lime 3981 ft, dr black shale 5730 ft; Mrs. C. L. Thompson 1-B, elev 3061 ft, fsh 2730 ft. McCarty Oil Co.'s A. A. Gray 3, rig. J. R. Miller et al's Bennett 1, sd 1700 ft. J. D. O'Mara et al's Bennett 1, sd 1230 ft. O. J. Perren et al's Eaton 2, elev 2437 ft, fsh 1765 ft. Pure Oil Co.'s Harrison 1, elev 3495 ft, dr 3905 ft. Rio Grande Oil Co.'s Webb 1, set cas 1818 ft. Riser & White's W. D. Riser 1, sd 405 ft. Schelling & Slaughter's Yates 1, sd 340 ft. Sides & Cloyd's Blackstone-Slaughter 1, dr 2610 ft. Williams & Moran's Heiner-State 1, dr 740 ft.

REAGAN COUNTY—Big Lake Oil Co.'s University 179, dr by 4 strings tools, td 4003 ft; University 5-C, dr lime and shale 6680 ft. Group One Oil Corp. (Conoco's) University 4-B, cem 9⅝ cas 2400 sacks at 5260 ft, td 5300 ft. T. B. Slick Estate et al's A. August 1, sp and sd.

REEVES COUNTY—Biggs & Smith's Cherokee 1, sp and sd. The California Co.'s Kloh 1, elev 2798 ft, top black lime 4207 ft, top Delaware 4236 ft, trace oil and salt water in gray sand 4243-46 ft. May & Milton's Ellis 1, sd hfw 1460 ft.

RUNNELS COUNTY — Boyce & Lamar's Lange 1, elev 1844 ft, sd 2643 ft. Chas. Dutton et al's G. W. Dean 1, fsh 1408 ft.

SCHLEICHER COUNTY—Delmar Oil Co.'s O'Harrow 1, elev 2421 ft, fsh 5576 ft. Eastland Oil Co. Unit Plan's Tisdale 1, lcn. Munger-Wilson Oil Co.'s Page 1, elev 2270 ft, sd 5053 ft. Paul Teas & Walter Gant's Allison 1, sd 3960 ft. J. D. Wesner et al's R. E. Ratliff 1, sd 750 ft.

SCURRY COUNTY—Camp Springs O&R Co.'s Strayhorn 1, sd 875 ft. Mid-Kansas O&G Co. & Vacuum Oil Co.'s Peckham 1, elev 2155 ft, hfw (sulphur) 4335-63 ft, ur 4373 ft. R. B. Pender O&G Co.'s Davis 1, ur 4970 ft. Seifert & Dibble's Blackburn 1, dr 380 ft.

STERLING COUNTY—W. C. Beesley et al's W. L. Brown 1, elev 2518 ft, ur 515 ft.

TAYLOR COUNTY — Adams-Ferguson & Hobbs' Lowe 2, dr 2115 ft. Eastland Oil Co. et al's A. W. Hunter 28, dr 1355 ft. H. B. Herring-Hucony Gas Co. et al's Richie 1, elev 1978 ft, sd 2570 ft. J. B. Jameson et al's Webb 1, elev 1905 ft, dr 6227 ft. Sanger et al's Abilene fee 1, elev 1719 ft, fsh 1240 ft. Sanger O&R Co.'s Osborn 1, rig.

TERRELL COUNTY—Big Bend Oil Corp. et al's Bassett 1, elev 2396 ft, dr 2620 ft. Mid-Kansas O&G Co.'s Good 1, elev 2405 ft, fsh 5226 ft.

VAL VERDE COUNTY—O. O. Owens et al's Mills 1, elev 2130 ft, fsh 6780 ft. Phantom Oil Co.'s Ingram 1, sd 3035 ft.

UPTON COUNTY—Gulf Prod. Co.'s J. H. Shirk 1, rig. Penn Oil Co. & Shell Pet. Corp.'s T. M. Anderson 1, elev 2701 ft, top salt 1335 ft, sd 3730 ft. TP Coal & Oil Co.'s King 1, machine.

WARD COUNTY—Alpine Oil & Dev. Co.'s Boogher 2, dr 650 ft. Atlantic Oil Prod. Co. & California Co.'s S. R. Allen 1, sp. Empire Gas & Fuel Co.'s O'Brien 1, rig. Gulf Prod. Co.'s Hutchings 4, elev 2639 ft, dr with rotary and hole loaded, 3022 ft; O'Brien 15, top salt 1145 ft, dr lime 2485 ft. Magnolia Pet. Co.'s Sealy 1, top salt 2090 ft, top brown lime 2700 ft, dr 2980 ft. R. F. Owen et al's Johnson 1, elev 2499 ft, sd 1200 ft. Sid Richardson et al's O'Brien 5, dr 2330 ft. Shipley Oil Corp.'s Monroe 1-A, elev 2655 ft, top salt 2485 ft, sd 2520 ft. T. P. Coal & Oil Co.'s Henry James 1, machine.

WINKLER COUNTY — Champlin-Winkler Oil Corp.'s Campbell 1, sd 4639 ft. Empire Gas & Fuel Co.'s Daugherty 1-C, top salt 1370 ft, top lime 2624 ft, making gas, 2990 ft. Magnolia Pet. Co.'s Bashara 1, fsh 127 ft; Scarborough 3, top salt 1225 ft, dr 2665 ft. Jeffery et al's Brown 2, sd 3120 ft. L. C. Turman et al's Daugherty 1, top salt 1440 ft, top lime 2645 ft, dr 2670 ft.

CENTRAL EAST TEXAS

Completions

HENDERSON COUNTY—
E. L. Chapman et al, Cade 2 ..... * 944
Geo. L. Pace et al, S. Anthony 1.. * 4039
HOPKINS COUNTY—
Okla.-Tex. Royalty Corp., Hamilton-Hess 1 ..... * 3766
HUNT COUNTY—
Mrs. Mamie Hammonds et al, J. S. West 1 ..... * 3290
RUSK COUNTY—
Clem S. Clark & Benedum-Trees Oil Co., McCafflin 1 ..... * 3256

ANDERSON COUNTY — Frost Oil Co.'s Botting 1, A. B. Patton sur, dk. Humble O&R Co.'s McGaffrey 1, Blackfeet block, I&GN Ry. Sur. A-418, elev 348 ft, cem sur pipe.

BOWIE COUNTY—Joe Burham et al's G. W. Burnett 1, top chalk 1430 ft, dr 2715 ft. Maud Redwater Oil Co.'s Merritt 1, Y. S. McKinney sur, rig.

CAMP COUNTY—McDonald Bros.-Atlantic Oil Prod. Co. et al's B. D. Tillery 1, J. H. Murphy sur, elev 440 ft, Pecan chalk 2410-2535 ft, dr sand 3890 ft.

CASS COUNTY—Wesley Morse et al's Henderson 1, C. C. Bailey sur, dk. Phillips Pet. Co.'s J. R. Olds 1, J. A. Stephenson sur, dr 255 ft. J. C. Rogers et al's Lanier 1, K. A. Welborn sur, elev 366 ft, top Annona chalk 2144 ft, dr 2160 ft. The Texas Co.'s Citizens State Bank 1, Jos. Watkins sur, elev 339 ft, dr 110 ft.

CHEROKEE COUNTY—Arkansas Fuel Oil Co.'s N. A. Deaton 1, F. Coleman sur, elev 368 ft, top Navarro 2500 ft, dr 3310 ft. Berry & Hale's Jones 1, dk. D. H. Byrd et al's W. H. Felder 1, Brooks Williams sur, sd 600 ft.

DELTA COUNTY — The Delta Co. (was Geo. Kean & J. B. Evans') Mrs. Neatherly-Hays 1, J. B. Anderson sur, elev 503 ft, cem cas 2801 ft, td 3091 ft. D. S. Head et al's J. J. Baker 1, T. P. Eddin sur, materials.

ELLIS COUNTY—G. C. Foster & S. C. Richardson's Moise-Cerf 1, La Pena sur, elev 440 ft, sd 2187 ft. E. M. Rogers et al's J. L. Winn 1, O. Wheeler sur, dr 1175 ft. The Triangle Corp.'s W. B. Hale 1, B. Smith sur, sd 3180 ft.

FANNIN COUNTY—Ed. V. Parsons et al's Morgan 1, J. E. English sur, elev 668 ft, sd 3423 ft.

FRANKLIN COUNTY — Harper-Byers et al's A. J. Laws 1, D. G. Rogers sur, dr 915 ft.

GREGG COUNTY — W. A. Moncrief-J. E. Farrell & Arkansas Fuel Oil Co.'s F. K. Lath-

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—side-tracking; sp—spudding; sr — straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

rop 1, Wm. Robinson sur, rig. W. T. Daniel and Mrs. Mamie Hammonds' Hamby 1, John Lout sur, elev 376 ft, dr 2150 ft.

HENDERSON COUNTY—H. B. Ashburn et al's T. E. Terry 1, Arron York sur, elev 397 ft, top Pecan chalk 2810 or 2840 ft, dr 3180 ft. Texas-State Oil Co.-R. H. Dearing & Sons et al's T. H. Skinner (20-ac) 1, J. Hinshaw sur, elev 453 ft, Pecan chalk 2500-2603 ft, dr Taylor marl 3310 ft.

KAUFMAN COUNTY—Otto R. Winter & Coastline Explorations, Inc.'s, Barrow 1, R. A. Terrell sur, tested salt water in Woodbine sand 3194-3518 ft.

NAVARRO COUNTY—L. G. Priest et al's H. Albritton 1, H&TC Ry. sur, testing gas show at 1106 ft.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, S. Larkin sur, sd 1505 ft. Johnson Pet. Co.'s Style 1, Dear sur, sd 2124 ft. Lloyd Oil Corp.'s R. H. Mace 1, Wm. Cullum sur, rig. Buffington et al's L. H. Moore (100-ac) 1, D. Cornelius sur, lcn.

RUSK COUNTY—J. Alford et al's W. L. Wallas-Trash 1, R. H. Pinney sur, dk. Arkansas Fuel Oil Co.'s J. A. Worrell 1, (38-ac lse.) Juan Ximinez sur, elev 412 ft, Pecan chalk 2490-2510 ft, top Austin chalk 3439 ft, dr 3480 ft. P. A. Bailey-J. W. Blanton et al's M. A. Thrash 1, F. Cordova sur, sd 201 ft. Ed W. Bateman et al's L. D. Crim 1, E. Sevier sur, elev 440 ft, dr 180 ft. E. L. Evans et al's A. P. Finney (20-ac) 1, Isaac Parker sur A-623, lcn. Frank P. Files et al's Robertson (14-ac) 1, R. H. Penney sur, dk. Frank Foster & Deep Rock Oil Co.'s C. D. Ashby 1, (60-ac), Juan Ximinez sur, elev 429 ft, dr 2010 ft. H. L. Hunt et al's Daisy Bradford 1, (17-ac), Juan Ximinez sur, elev 391 ft, dr 2050 ft. Kimbrough & Miller's D. Bradford 1, Juan Ximinez sur, rig. Geo. D. "Tex" Lloyd et al's Camp (5-ac) 1, Juan Ximinez sur, sp and sd. J. K. Lewis et al's Oscar Jones (29-ac) 1, W. Brown sur A-95, lcn. A. A. Malone et al's W. M. Camp-Ashby (4-ac) 1, Juan Ximinez sur, lcn. C. Rosenfield et al's E. L. Pinkston 1, M. V. Pena sur, elev 363 ft, sd 2015 ft. L. L. Smith et al's W. H. Worrell 1, Juan Ximinez sur, elev 424 ft, top broken Pecan chalk 2338 ft, and hard chalk 2553 to 2722 ft, dr 2760 ft C. C. Stone et al's McCullough 1 and 2, Juan Ximinez sur, lcns. Stroube & Stroube's W. H. Frederick 1, Juan Ximinez sur, dr 1600 ft.

SMITH COUNTY—Owen-Sloan Oil Co. & R. H. Davis' J. H. Starnes 1, J. W. Allen sur, elev 417 ft, top Pecan chalk 2738 ft, sd 3225 ft. T. B. Slick Estate & J. G. Kugle, Jr.'s, M. Freeman 1, A. J. Lagrone sur, elev 498 ft, top Pecan chalk 2955 ft, sd 3509 ft. Sun Oil Co.'s Oscar McGehee 1, Thomas Quevedo sur, elev 428 ft. Thayer & Rogers' Dr. Willingham 1, Jacob Herrin sur, sd 1650 ft.

TITUS COUNTY—Deep Rock Oil Co.'s E. L. McElroy 1, Kendall Lewis sur, materials.

VAN ZANDT COUNTY—Bethel Oil Co.'s P. Smith 1, M. Neal sur, elev 435 ft, sd 4603 ft. D. H. Byrd et al's C. H. Morris 1, P. Piles sur, elev 570 ft, Pecan chalk 3258-3401 ft, top Austin chalk 4605 ft, dr 4615 ft. J. C. Fore et al's P. Smith Hand 1, Wm. Sherman sur, dk. Hartt Pet. Co.'s M. L. Cox 1, A. C. Nugent sur, sp and sd. Ward B. Powell et al's Kellam 1, Jessie Russell sur, elev 515 ft, dr 2565 ft L. G. Priest et al's Blanch Blewett 1, E. Porter sur, elev 610 ft, Pecan chalk 2795-2957 ft, set cas and tested dry at 3212 ft.

VAN FIELD—Cranfill & Germany, Inc.'s, L. L. Swain (4½-ac strip) 1, sp and sd. Hartt Pet. Co.'s Swain (2.3-ac strip) 1, sp and sd. Helms et al's C. E. Bogue 1, Marshall University sur, elev 461 ft, sd 1900 ft. Humble O&R Co.'s R. S. Blake 5 and 6, rigs; A. J. Fowler 1, rig; Sanger Bros. 2, lcn. Imperator Oil Corp. & Paul Vitek's G. J. Luther (3.01-ac strip) 1, elev 447 ft, top Pecan chalk 1653 ft, Austin chalk 2630-2810 ft, tested salt water in Woodbine sand 3025 ft and to pb and retest. Roy Jenkins et al's M. E. Davis 1, sd after pumping test, td 3031 ft. Kraft & Kesey's Wylie Enas (30.6-ac strip) 1, J. Prado sur, Pecan chalk 1645-1770 ft, Austin chalk 2550-2797 ft, made small show oil via tester, td 2970 ft. Pure Oil Co.'s Sam Allen 1, cem cas 309 ft; A. D. Clark (2-ac) 1, rig; A. D. Clark (42-ac) 1, top Austin chalk 2460 ft, cem cas 2748 ft; R. E. Cade 1, dr chalk 2430 ft; V. T. Davis 1, dk; M. Elliott 1, completing 2933 ft; A. W. Ellison 2, dk; Free Methodist Church (2-ac) 1, cem cas 2707 ft; H. C. Gilbert 1, dk; A. G. Maxfield 2, completing 2956 ft; Mary P. Neills 2, dr 200 ft; L. A. Smith (40-ac) 1, cem cas 306 ft; G. C. Stewart (50-ac) 2, dr 1471 ft; O. L. Swain (80-ac) 2, dr 296 ft; O. L. & L. L. Swain (43.8-ac) 2, dr sandy shale 2928 ft; W. F. Swain (40-ac) 2, no oil but tested 909,000 ft gas, td 2924 ft; Swain 3, dr 856 ft; J T. Taylor 2, rig; A. G. Tunnell (50-ac) 1, top Austin chalk 2545 ft, probably failure, testing 3013 ft; E. B. Tunnell (4.23-ac) 3, dr 2145 ft; I. W. Thompson 1, dr shale 2548 ft; R. L. Wells 5, dk. Sun Oil Co.'s I. W. Thompson 3, dk. The Texas Co.'s R. A. Tunnell (100-ac) 2, cem cas 2800 ft; Tunnell 3, top Austin chalk 2400 ft, cem cas 2721 ft. Ventex Oil Co.'s L. A. Smith (2-ac strip) 1, dk.

WOOD COUNTY—Wood County Dev. Co.'s Ricks 1, Daniel Fuller sur, sd 1000 ft.

EAST TEXAS

CASS COUNTY — Wesley Morse et al's Henderson 1, C. C. Bailey sur, dk. Texas Co.'s Citizens State Bank 1, Jos. Watkins sur, rig up. Jno. C. Rodgers' Lanier 1, K. A. Welborne sur, cor sandy shale 2156 ft. Phillips Pet. Co.'s J. R. Olds 1, sp, dr 250 ft.

HARRISON COUNTY — Shell Rock Pet. Co.'s Daugherty 1, Burris sur, arr deepen, td 3520 ft.

MARION COUNTY—W. D. Chew's Fee 1, Wm. Hamilton sur, 6-inch cas 2270 ft, plugged back to 1610 ft, arr perf cas, old td 3426 ft. Trammell et al's Hussey 1, Chas. Lockhart sur, elev 282 ft, top chalk 1771 ft, claim oil show, r to set 8-inch cas 2 ft hd chalk last 2 ft, td 1884 ft.

PANOLA COUNTY—Knott et al's Marion Durham 1, Chas. Haley sur, arr resume dr in lime, td 2605 ft. Smith et al's Hunt 1, Albert Johnson sur, dk. Bell et al's Burnett Lbr. Co. 1, S. B. Hendrick sur, cor sandy shale show oil, set 8⅛ cas 2027 ft, dr plug unable r to bottom due to junk about 3 ft below cas seat, bailed to bot cas small show oil no gas, arr mo, td 2097 ft (corrected). Ark. La. P. L. Co.'s Brumble A-2, B. C. Jordan sur, 9-inch cas 2592 ft, dr 3825 ft. Creighton & Hart's Kyle 1, J. Tippett sur, top chalk 1444 ft, top Blossom 2216 ft, mo junk 2940 ft. Warren & Dawe's McNeese 1, A. Booker sur, dk. W. G. Banks' Baldwin 1, Hampton sur, rig up.

SABINE COUNTY—Loring Oil Co.'s Nona Mills Lbr. Co. 1, Jas. Mason sur, tested 1 mil ft gas, ds set 9-inch OD cas 4710 ft, td 4200 ft.

SHELBY COUNTY — C. R. Ridgeway's Parker 1, Jesse McKelvey sur, set 9-inch cas to shut off water at 1831 ft, td 1837 ft. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3300 ft.

SOUTH TEXAS

BASTROP COUNTY—Champion Bros.'s H. B. Smith 1, one mi w of Elgin, td 2345 ft, casing in Georgetown, csg set 1900 ft on top of cavity in chalk, showed oil to 1941 ft, being dr to Edwards lime. Chas. Long's McWilliam's 1, Geo. T. Glasscock sur, td 620 sd, extend water line. Texas Production Co.'s Tregg 1, Stewart sur, td 1000 sd.

BEE COUNTY—Al Buchanan's blk 8, townsite, center blk 8 Pettus townsite pool, td 3945 ft, closed down. Cosden Oil Co.'s Stoltfus 1, 2 mi e of Tuleta, td 4390 ft, set 6⅝-in csg. at 4352 ft, completing. Humble's McKinney 8, td 3988 ft, casing. Hulbert et al's Chestnut 1, Miguel de los Santos sur, td 3805 ft, dr. Humble & Hulbert et al's Wood 1, td 5078 ft, 450 ft of ds and test tool lost in hole, milling. Houston Oil Co.'s Pettus Town 2, blk 21 Pettus pool, td 4100 ft, sd for orders. R. Hahn et al's Copeland 1, td 3575 ft, sd for orders. Independent O&G Co. & Moody-Seagraves Prod. Co.'s Quincy 1, td 5252 ft, coring; Welder 1, ru. E. M. Jones' Rapp 3, td 4307 ft, closed down. J. S. Mauldin's Mauldin 1, td 3200 ft, dr. Ed Price's Weiss 2, td 3715 ft, sd for fuel; Weiss 3, lcn; Weiss 1, td 4415 ft, to dr deeper. Raullins et al's Campbell 1, td 200 ft, dr. Rowan & Hope's Gorgee 1, dk, waiting on rig. Simms Oil Co.'s Holzmark 2, lcn. Union Prod. Co.'s Ray 22, lcn; Ray 23, td 3919 ft, sand 3916 ft, set 6⅝-in pipe at 3915 ft, completing; Ray 25, td 1100 ft, dr; Wilson & Holl's Townsite 14, lcn; Townsite 16, dk. CRM Oil Co.'s Townsite 9, td 3914 ft, closed down.

BEXAR COUNTY—R. H. Eckert's Dobrowolski 10, no report. Eckert & Son's John Brehm 3, td 450 ft, dr. Gatlin Oil Co.'s Mrs. Anna Beck 2, td 680 coring. Morrosos & Collins' Hamberdale 4, no report. Wm. M. Morgan's Masterson 3, td 810 ft, showing large amount of oil. To be drilled deeper into sand before completing. Penn. Oil Co.'s Kosub 1, test in 1370 acre unit blk td 390 ft dr. J. Morgan Russell's Price Storey 1, td 286 ft, dr show of gas. Penn-Tex Oil Co.'s Sandemer 5, lcn; Sandemer 6, lcn; Sandemer 7, lcn; Dobrowolski 3, prod. 2,000,000 cu ft gas; Dobrowlski 4, to move on. Russell & Moore's Mills 2, td 980 ft, coring in broken lime. Swearingen Bros.' 3, spd in. Weilbacher & Associates' Ernst 1, td 710 ft, set csg about 700 ft, show considerable high gravity oil, completing.

BLANCO COUNTY—Anderson & Manning's Speer 1, no rept. Adams & Lysles' Leeders 1, td 595 ft, dr. Meeks et al's E. W. Walker 1, td 980 ft, dr. C. L. McCreary's Kiers 1, td 670 ft, sd to re-dr. Forest Oil Co.'s Rosenfield et al, Hohenberger 1, td below 460 ft, dr. Hardy Sitton's McMillen 1, td 550 ft, dr.

BROOKS COUNTY — Ed East, Miller & Albricht Braulia C. De aGrcia 2, td 400 ft, set 6⅝-in csg, now standing. Houston Oil Co. of Texas' Holbein Wormser 2 td 4861 ft, sd. Southern Crude Oil Purchasing Co.'s Holbein-Wormser 1, td 4212 ft, dr, shale and lime.

CALDWELL COUNTY — Anderson et al's S. J. Barber 1, td 1905 ft, set casing top of serpentine 1840 ft, strong show of oil, to dr in at last report. Joe Bruner's Malone 1, prep to ru. Cargill et al's Thomas 1, prep to spud in. J. E. Mills et al's McMahon 1, td 209 ft, sd. L. H. Wentz's Myrick 1, core hole, permit granted.

COMAL COUNTY—Caldwell & Lanier's T. J. Byler 1, td abt 500 ft, dr.

DE WITT COUNTY—Gibson et al's William Van Roeder 1, td 1435 ft, dr. Sheldon Pet. Co.'s Goehring 1, lcn. Pena Oil Co.'s Junkers 1, td 2845 ft, fsh for tubing.

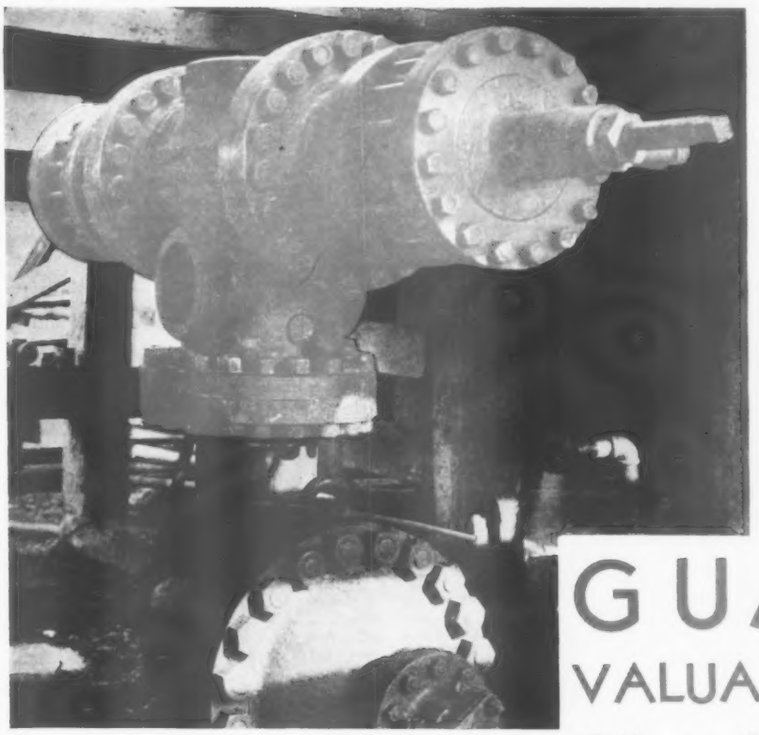
DUVAL COUNTY — Cooperative Drilling Co.'s John Dinn 4, ru. Frasher and School-

Interest in Porterville Field Wanes

Bakersfield, Calif. — Reports that oil produced in the shallow Porterville field, located about 30 miles north of the Kern Front field, contains ichthyol are not expected to stimulate efforts to develop commercial production in this very questionable area. Following the supposed completion of a commercial well three months ago, about 20 wells wer started by small operators who were attracted by the possibility of obtaining oil at less than 1000 feet. What is claimed to be the discovery well has always produced far more water than oil and the field should be classed with the average list of wildcats.

Abandon Lompoc District Wildcat

Santa Barbara, Calif. — Abandonment of Prairie Oil & Gas Company's Shyvers 1, a wildcat in the Lompoc district, removes the only active project in this immediate district. The well was drilled to 5590 feet and abandoned in hard gray sand which seemed to offer little promise for deeper levels. Several companies have anticipated production in the Vaqueros sand in this district but actual drilling operations have not supported the theory.



GUARDING
VALUABLE GAS, PRECIOUS OIL & COSTLY EQUIPMENT

The Cameron Steam Operated Blowout Preventer is mounted, by a flanged connection, to the last string of casing, below the derrick floor. Here it rules supreme, master of all below it and guardian of all above.

Not even the highest pressures are of sufficient strength to overcome the steel around steel grip which this preventer takes on the drill stem. Opening the 4-way operating valve instantly drives the steel rams against the drill stem or casing so that it is completely and entirely encircled by their steel concave faces. The positiveness of this grip is further secured by the machined recesses at the top and bottom of each ram face. This provides a flat surface against which couplings or tool joints may butt and through which they cannot pass.

The 4-way operating valve may be located at any safe and convenient distance from the well. The action of the rams is simultaneous with the opening of the 4-way valve.

The Cameron Steam Operated Blowout Preventer is always in position, always ready. No special attachments to put in place, just open the 4-way valve without any of the crew going near the derrick floor. Length of drill stem in hole, weight of mud or pump pressure is not a factor in preventing blowouts with these preventers.

CAMERON IRON WORKS, INC.

HOUSTON, TEXAS

Stocks in All High Pressure Territories

field's Bishop Duval Land Co. 1, lcn. Humble's Kohler 50, dk. Magnolia Petroleum Co.'s Edge-Hahl 1, td 3624 ft, dr; Benavides 3-A td 2765 ft, dr. Sloan et al's Luby 1, lcn. SRC Co.'s Duval County Ranch Co. 2, td 1800 ft, dr, no sand reported at 1700 ft. Vacuum Oil Co.'s Duval County Ranch Co. 1, dk.

EDWARDS COUNTY — James Dalgish et al's Sid Peterson 3, Warner Ranch, td 4380 ft, dr in hard lime last report. Phillips Pet. Co.'s Holman 2, td 6285 ft, dr.

FRIO COUNTY—Wray & Dunbar's Barnes 1, td 2368 ft, set csg at 2311 ft, showed considerable gas, about 1000 lbs. pressure, working on well. United North & South Dev. Co.'s Little 1, td 3536 ft, set csg in Edwards, re-dr.

GOLIAD COUNTY—Gibson Oil Co.'s C. B. Parks 1, td 4300 ft, dr. Remenschneider et al's A. T. Fromme 1, td 2400 ft, sd. T. B. Slick et al's Potter 1, spudded. Union Prod. Co.'s Ray 27, lcn; Ray 28, td 3700 ft, dr.

GUADALUPE COUNTY—Adams & Lysles' Seligman 1, td 900 ft, dr. Calhoun & Miller's Linebarger 1, td not reported. Humble's Denman 19-A, lcn; Denman 18-A prod 850 bbls; Sallie Wilson 7, td 2605 ft, dr; Deman 20-A, lcn. Louisiana O. R. Co.'s Thomas Dix 8, lcn; Thos. Dix 9, lcn. Mag. Pet. Co.'s Kelin 3, td 2533 ft, pump 500 bbls; Rand Miller 5, td 2625 ft, being completed; Thomas Dix 13, td 1200 ft, dr; Thomas Dix 14, td 690 ft, dr; Klein 4, td 1260 ft, dr; Rand Miller 6, td 300 ft, dr. Suttle et al's Baenziger 2, td 1957 ft, casing set 1763 ft top of Austin chalk, bailed oil and gas, no further report. The Texas Co.'s Posey-Baker 7, td 2605 ft, pumping 1300 bbls; Wiley-Schmidt 2, td abt 2600 ft, prod. 800 bbls; Knoblock 6-A lcn; Knoblock 7-A lcn; Knoblock 8-A lcn; Knoblock 9-A lcn; P. Roamel 4, lcn; R. C. Appling 3, lcn. Trinity Drillers' J. M. White 2, td 2201 ft, sd in Edwards topped at 2189 ft. Dr. F. L. Thompson's Posey 2, lcn, waiting on permit. United North & South Dev. Co.'s Wells 1, td 500 ft, dr. H. M. Wurzbach's Fee 1, permit granted.

JIM HOGG COUNTY—Cole Petroleum Co.'s W. P. Allen 1, td 800 ft, dr. H. W. Pippin's Hinnant 1, dk. J. D. Pulliam, Jr.'s, Jones 1, td 1602 ft, standing. E. E. Watts Agent's Gomez 1, td 1568 ft, testing sand. Wilson's Edds 1, ru.

KARNES COUNTY—Clayton, Lightfoot et al's Barnett 1, td 2925 ft, standing. Fort Bend Oil Co.'s Newberry 1, td 2976 ft, set 6⅝-in csg at 2958 ft, pull screen and testing. J. Morrissey's Ragsdale 1, td 1998 ft, sd.

KENDALL COUNTY—Borget et al's Willie Haag 1, td 1250 ft, resume dr; R. M. Perkins' Lawhorn 1, td 710 ft, fsh for tools. Dixon et al's Behr 1, td 2290 ft, sd for orders. Molwinkle et al's Karston 1, td 1580 ft, pulled casing, hole closed. Permian Oil Co.'s Boles 1, td 1150 ft, dr. Hardy Sitton's W. B. Garvin 1, td 880 ft, dr. P. B. Sterling's McCrocklin 1, td 1600 ft, dr..

KERR COUNTY—Mashe & Turnstill's Jeff Love 1, td 2140 ft, dr.

KINNEY COUNTY—Mag. Pet. Co.'s Wardlow 1, Blaez sur, td 3486 ft, dr.

KLEBERG COUNTY—Bowen & Sarles R. H. Simmons 1, td 1640 ft, dr.

LA SALLE COUNTY — Fred W. Volvz's Coleman 1, set 40 ft 10-in csg, waiting on cement.

LEE COUNTY—Burt et al's M. D. Rickett's R. C. Saunders 1, td below 3000 ft, dr, no later information. Marts & Beavens' Thomas 1, td 1650 ft, lost hole, skidded derrick over 50 ft, new hole at 290 ft. A. H. Wheeler et al's McDay 1, td 1754 ft, sd, rig moved off, but steel derrick still standing.

LIVE OAK COUNTY—Houston Oil Co.'s Snyder 1, td 2950 ft, dr; Cartwright 22, td 5424 ft, repairing rig, well is gassing very heavily; Boothe 1-A td 4590 ft, dr. Jacobs, Buzzino & Pickett's Key 1, td 700 ft, sd. Six Keoughan's C. E. Terrell 1, td 1810 ft, dr. Markley et al's Reeves Brown 1, ru. Tul-Tex Oil Co.'s L. Jacobs estate 1, spudded and sd for water.

McMULLEN COUNTY—Brodie, Sheaver & Emerich's Shiner 1, spudded and standing. Mogul Pet. Co.'s Martin 1, td 28 ft, set 10-in csg, now standing. Whall et al's Shiner 1, permit granted.

MAVERICK COUNTY — Rycade Oil Co.'s Chittim 5, sec 129, td 5572 ft, prod. 12,000,000 cu ft gas with 2250 lbs pressure; Sullivan 5, sec 82, td 7092 ft, fsh.

MEDINA COUNTY — Calco Petro. Co.'s Crawford 1, td 2630 ft, dr; Georgetown topped at 2695 ft. J. O. Dore's R. J. Taylor 1, permit granted. National Oil Co.'s Howard 1, 1645 ft, standing.

NUECES COUNTY — Calallen O&G Co.'s Allen 2, td 1517 ft, dr. Houston Oil Co.'s Comstock 1, td 1946 ft, dr; Hunter 1, lcn. Moody-Seagraves Prod. Co.'s Smith 1, prep to spud in. Saxet G&O Co.'s eParson et al Donnigan 2, td 4915 ft, dr; Racheal 17, td 3930 ft, coring; Dunn 7, dk. South Texas Prod. Co.'s Walters 3, td 1984 ft, casing set, waiting on cement; Ollie Purl 2, td 1786 ft, casing set on top of gas sand, prep to dr in. H. H. Weinert's Hohle 1, td 450 ft, set surface csg, re-dr.

REAL COUNTY — McGinley & Gigler's Habley 1, td 590 ft, dr.

SAN PATRICIO COUNTY — Cosden Oil Co.'s Powell 1, no report. Jacobs, Buzzini & Pickett's J. C. and Bobby Baldwin 1, td 4020 ft, sd, to move on heavier rig. J. L. Kenedy's Lellie McRae 1, td 2152 ft, sd. Peterman Oil Co.'s O. K. Crow 1, td abt 4100 ft, sd; Foster 1, lcn. Saxet Oil Co.'s Carroll 1, dk up. Union Prod. Co.'s Welder 4, td 5780 ft, dr.

STARR COUNTY—J. L. Smith's Welsh 1, td 1060 ft dr. Los Olmos Oil Co.'s Kelsey-Bass 1, td 375 set 8-in csg flowed gas and sulphur water at 371-73 ft. The Texas Co.'s V. G. Guerra 5-A td 3614 ft sand test dry core deeper.

UVALDE COUNTY — Phantom Oil Co.'s Claudt 1, td abt 2760 ft dr. Waldrop & Welsh's Edmonds 1, td abt 1200 ft standing.

VAL VERDE COUNTY—Independent Operator's Whitehead 1, td 5430 ft, re-dr on receipt of 6000 ft of line. Phantom Oil Co.'s Ingram 1, td 3035 ft, sd.

VICTORIA COUNTY—Houston Oil Co.'s McFadden 1, td 4575 ft, dr. Lion O&R Co.'s McFadden 2, td 6250 ft, sd. The Texas Co.'s McFadden 1, td 5405 ft, test 810 ft of s. w.

WEBB COUNTY — Alamo Dr. & Leasing Co.'s S. Benavides 2, td 1900 ft ,dr. O. W. Killam's Killam 1, td 2671 ft, test sand topped at 2666; Bruni 1, Cezeau & Putman, td 2980 ft, dr; Garcia 1, td 1848 ft set 6⅝-in top of sand. Magnolia Pet. Co.'s Sue Jones 1, td 5001 ft closed down. Geo. S. Marshall's C. W. Webster 1, td 2000 ft dr

WILLIAMSON COUNTY—Anderson et al's Lawrence 3, td abt 2000 ft set csg at 1501 ft; Lawrence 8, s off-set to No. 1 ru; T. P. Simmons 6-A, td not rept, prod 250 bbls; S. J. Smith, td 2575 ft. Bartlett & Wilson's R. E. Steward 1, prod. 25 bbls; R. E. Steward 2, td not rept dr. J. L. Collins' M. V. Lawrence 5, td 1462 ft prod 125 bbls. E. E. Ertel, et al's K. Swenson 1, td 1035 ft sd. Elliott et al's A. J. Carlson 1, td 400 ft dr. Hrska Bros.' Guentzel 1, e of Chapman field, td 1000 ft, dr. Martin et al's S. Jarrall 1, td 40 ft, sd. Tom Patton's J. C. Abbott 1, no rpt. A. M. Keisker's E. L. Chapman 1, dk. Texas Gas Fuel Dev. Co.'s Geinert & Allison 1, td 40 ft, sd. Sarsfield & Wilson's J. A. Walker 1, td 700 ft, sd; G. Stratton's J. C. Abbott 5, td 1000 dr.

WILSON COUNTY — Rycade Oil Co.'s Johnson 1, 150 ft from nw and 600 ft from ne line of railroad on J. M. Balmeseda sur, lcn.

ZAPATA COUNTY — Allied O&G Co.'s Guitierrez 12, td 100 ft, standing. Blair & Son's E. Guitierrez 1, td below 1750 ft, dr. O. W. Killam's Cuellar 31-C, td 1576 ft, sand at 1570-76 ft, producing 100 bbls oil; Lopez 1, lcn; Cuellar 32-B dk. Lincoln O&G Co.'s Gutierrez 1, td 1150 ft, dr. Mackenzie & Tallmadge's G. F. Trevino 1, td 150 ft, dr. Moore & Moore's Adela G. De Flores 1, td 1573 ft, sand topped at 1570 ft, testing through tester; Adela G. De Flores 2, td 50 ft, standing. Nordan & Morris & Grimm & Yakey's Bustamente 1, Comitas Grant, dk. National Oil Co. of Texas' Luther et al 2, td 1430 ft, dk; Luther et al 1, ru. B. F. Nixon's A. Gutierrez 1, td 37 ft, set 10-in casing, to re-dr. John H. O'Hern's S. Benavides 1, spudded in. John Pappas Pool, Inc.'s Flores 1, prep to spud. Penny Prod. Co.'s Juan V. Cuellar Jr, et al 1, td 1725 ft, sand at 1655 ft, but failed to get a test. Pal-Mar Oil Co.'s Jose Bustamente et al 1, dk. W. R. Shankle's Trevino 14 td 1300 ft, casing set at 1287 ft, top of sand 1291 ft, prod 50 bbls; M. Trevino 15 dk; Gutierrez dk; Guterriez 7 lcn. SR & C. Oil Corp's F. Cuellar 1, lcn; Cuellar 12-B td 1222 ft, set casing waiting on cement; F. Cuellar 1, lcn; F. Cuellar 2, lcn. South Texas Prod. Co.'s F. Gutierrez ru. Wicker, Arnold & Ahler's M. Garza 3, ru. J. W. Winch's Alejandro Bustamente 1, td 1251 ft, casing set at 1216 ft, sand at 1216-32 ft, tested 60 ft oil, cap 1233-35 ft, another sand 1236-51 ft, now testing. T. H. Ward's Guadalupe Urbide 1, ru.

ZAVALLA COUNTY — Ed Anglin's Matthews 1, td 750 ft, dr. Texas Gas Utilities Co.'s Pryor 2, td 990 ft, dr. F. W. Weigand's Gates 1, td abt 3100 ft, dr.

TEXAS GULF COAST

AUSTIN COUNTY—O'Hara et al's Schrader 1, sd 1795 ft. Empire's Kunze 1, San Felipe, dr 4850 ft shale. Humble's Duncan State Land 2, e edge Raccoon Bend, set cas 3125 ft; R. Hardy B-3, e edge Raccoon Bend, dk; Mueller 9 dk; Reese B-1 dr 2701 ft sandy shale; Remmert B-1 dr 250 ft; Thompson 11 dr 125 ft.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, two mi s Nash Dome, dr 5490 ft sand and lime. Steel & Strickland's Lochridge 1, near Lochridge, sd 50 ft. Rycade's Wisdom 1, Nash Dome, cutting dr stem, bottom sidetrack hole at 4330 ft, td 5660 ft. Rycade & Amerada's Seaburn 2, Stratton Ridge, dr 2775 ft shale. Freeport Sulphur Co.'s Fee 2001, Bryan Mound, dr 2790 ft in second hole. The Texas Co.'s Ewing 1, Manvel, dr 7360 ft hard sand; J. H. Murdock 1, Fresno dr 4775 ft gbo. Mills Bennett's Allen 2, Allen Dome, dr 5060 ft sandy shale. United Oil Syndicate's Speer 1, 3 mi n Danbury, ru.

CALHOUN COUNTY — The Texas Co.'s Thomas 1, Chocolate Creek, J. P. Tilley sur, dr 5955 ft sticky shale.

CHAMBERS COUNTY—Pure's Lost Lake 5, fsh 5160 ft; Mayes 12, Lost Lake, ru. Shell's Herff 2, Moss Bluff, dr 5239 ft sticky shale. Chicago Oil Corp.'s Lawrence 1, 10 mi s Barbers Hill, dr 4010 ft shale and lime.

FORT BEND COUNTY—Gulf's Moore 25, Moores Field, flowed 525 bbls net oil daily at 4040 ft; Moore 26 initial prod. 530 bbls at 4030 ft. Humble's Nelson 11, Sugar Land, flowing 700 bbls daily at 3556 ft.

GALVESTON COUNTY—Gulf's Smith 10, High Island, dr 5505 ft hard sand.

GRIMES COUNTY—Wainwright-West Oils, Ltd.'s Templeman 1, 6 mi s Navasota, sd 3500 ft. R. H. Byrd-Deering et al's Muenker 1, ½ mi n Anderson, dr 3050 ft shale.

HARDIN COUNTY—D. O. Speight's Gidrey 1, 4 mi s Batson, sd 2850 ft.

HARRIS COUNTY—Humble's Simms-Smith 78, Goose Creek, set cas at 4990 ft; Warren 8, Hockley, dr 5185 ft shale; Minnetex 4, Mykawa, dk. W. C. Turnbow et al's Miller 1, 3 mi e Deer Park, dr 2150 ft gbo and lime. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, sd 4250 ft. Gulf States Oil Co.'s Augspurger 1, 8 mi n Houston, dr 2540 ft gbo and lime. Golden Star Pet. Co.'s McDade 1, 1 mi n Dyersdale, dr 4465 ft shale.

JACKSON COUNTY — Jackson Co. Oil Synd.'s Drushell 8, Edna, set cas at 3870 ft; Lee 2, wo, Edne Gas Field, dr 3915 ft lime. Warner-Quinlan's Hungerford 1, Henry Smith sur, lcn.

JEFFERSON COUNTY — Westbury Oil Co.'s West 1, S. Choate sur, sd 4100 ft. The Texas Co.'s Pipkin 4, Big Hill, dr 2865 ft sand. Humble's McFaddin 1, 8½ mi e Big Hill, dr 250 ft gbo.

LIBERTY COUNTY—Saxet Oil Co.'s Davis 2, N. Dayton, dr 4465 ft shale. Harrison Oil Co.'s Quintette 4, dr 4450 ft hard sand; Harrison-Abercrombie's Gulf Fee 1, N. Dayton, flowed 1150 bbls 41 gravity oil daily at 4805 ft; Jones 1, dr 4480 ft shale. Gulf's Ezzell 1, Hankamar, dr 5075 ft shale; Boyt 9, Hankamer, came in flowing 675 bbls, 40 per cent water and b. s., at 4005 ft. Yount-Lee's Moores Bluff 3, Esperson, coring 7635 ft, sand. Humble's Breeden 1, Moss Bluff, dr 5720 ft lime rock; Hylton 1, Moss Bluff, dr 6350 ft sandy shale; Sergent 1, dr 4885 ft shale and lime. Rycade's Keiskell 1, Jos. Dugat sur, dr 5675 ft sand and lime.

MATAGORDA COUNTY — Empire's Boker 1, Citrus Grove, dr 5785 ft shale. Cockburn Oil Corp.'s Hawkins 2, Shepherds Mott, north dome, dr 4025 ft rock.

MONTGOMERY COUNTY—Price & Wilhite's Juergus 2, 3 mi n Conroe, sd 2950 ft. Lake Creek Oil Co.'s Hunt 1, Conroe, set cas at 1350 ft.

ORANGE COUNTY—The Texas Co.'s Stark 2, Port Neches, dr 5875 ft sticky shale and sand. Gulf's W. H. Stark 1, Port Neches, dr 6825 ft shale.

WALKER COUNTY—Joyce Richardson et

al's Smither 1, 12 mi n Huntsville, sd 3450 ft.

WASHINGTON COUNTY—Clifton et al's Pruiss 1, 3 mi w Brenham, sd 1630 ft.

WHARTON COUNTY—C. S. Thomas' Taylor 1, Boling, temp abn at 1585 ft; Volney 1, Boling, sd 400 ft. Givan et al's Hudgins 1, sd 576 ft.

SOUTH LOUISIANA

ACADIA PARISH—Yount-Lee's Houssiere-Latrielle 9, Evangeline, dr 8018 ft shale.

ASCENSION PARISH—Gulf's United Lds. Co. 7, Sorrento, wo, losing returns in cap rock at 1750 ft.

ASSUMPTION PARISH—Poor Boys Drlg. Co.'s LaBarre Est. 1, 47-12s-13e, sd 2420 ft. Texas Gulf Sulphur Co.'s Landry 1, Napoleonville, dr 1700 ft rock. Dugas & LeBlanc 1, Napoleonville, abn in cap rock at 675 ft.

AVOYELLES PARISH — R. A. Tippett's Chatalin 1, 5-1n-3e, sd 3400 ft. M. L. Vincent's Morrow 1, 14-2s-4e, dr 4225 ft shale and lime.

CALCASIEU PARISH — Wilfred Lahay's Jardell 1, 25-10s-12w, dk. J. O. Davis' Ind. Lbr. Co. 1, Starks, sd 6175 ft. Yount-Lee's Miller 1, w edge Lockport, sdtr 7750 ft. Union Sulphur Co.'s Martha Moss 1, Lockport, tested salt water at 6615 ft; Moss 2, Lockport, completed at 5290 ft for 700 bbls 33 gravity oil. Dr. Thomas et al's Hewitt 1, lcn. Crawford Doyle's Johnson 1, nw flank Starks, dr 300 ft.

CAMERON PARISH—Pure's Yount-Lee 10, Sweet Lake, dk. Shell's Watkins 15, Black Bayou, completed for 1200 bbls pipe line oil daily at 4402 ft, through tubing and with 3/8-inch choke; Black Bayou State 1, Black Bayou, came in flowing 900 bbls 25 gravity oil at 5200 ft. Freeport Sulphur Co.'s Yount-Lee 4, Black Bayou, dr cap rock 1200 ft; Yount-Lee 5, Black Bayou, set cas at 1050 it. Vacuum Oil Co.'s Cameron Meadows 1, Cameron Meadows, dr 5075 ft lime and hard sand. The Texas Co.'s Calcasieu Lake State A-6, stuck dr stem at 1975 ft, cap rock State East Hackberry 7, dr 4925 ft heaving shale. F. R. E. Tr., John Vincent 1, Hackberry, ru.

IBERIA PARISH—The Texas Co.'s Vermilion Bay 6, lcn.

IBERVILLE PARISH—Standard's Wilbert 8, Bayou des Glaise, stuck dr stem at 3640 ft. Standard's L. Baist Cooperage Co. 1, Bayou Blue, dk foundation ready; E. B. & S. P. Schwing 1, sd 4020 ft. Shell's Wilbert 5, White Castle, dr 3665 ft sand and lime. Gulf's Gay 1, Bayou Choctau, spudded and shut down. Tex. Gulf Sulphur Co.'s Wilbert 4, Bayou Choctau, dr 500 ft sand rock; Wilbert 5, canal completed; Wilbert 6, lcn; Wilbert 7, lcn.

JEFFERSON PARISH—Humble's Dalaware Fur. Co. 1, Barataria dome, dr 6250 ft hard sand and shale.

LA FOURCHE PARISH—The Texas Co.'s I.L & E-Leesville 1, 27-21s-22e, depth 5615 ft.

PLAQUEMINES PARISH — Humble's Cockrell-Moran 2, Lake Grande Ecaille, dr 1050 ft. The Texas Co.'s Garden Island Bay State 4, dr 4415 ft gbo. Gulf's Buras Levee Board 1, Rose dome, blew out while drlg at 250 ft, cratered.

ST. JAMES PARISH—Convent Oil Co.'s Jacobs 1, 28-11s-4e, will install air lift.

ST. MARTIN PARISH—The Texas Co.'s Iberville Ind. Co. 3, Hager dome, lcn. St. Martin Ld. Co. 5, Hager, bldg dk. Rycade's Woodyard Lake 1, Bayou Bouillon, fsh 6060 ft; State 4, Bayou Bouillon, dr 3925 ft sand and shale.

ST. TAMMANY PARISH—Washington & St. Tammany Drlg. Co.'s Coussack 2, 5-6s-10e, dr 785 ft gbo.

TERREBONNE PARISH — Chas. Paggi's Evergreen 2, Houma, sd 1800 ft. La. Gas & Fuel Co.'s Minor Est. 1, Houma, set cas at 1800 ft. The Texas Co.'s Bay Juncp 2, dr 5525 ft lime rock; Dog Lake A-3, dr 5160 ft sand; Caillou Island State 4, lcn; Caillou Island State 5, dr 3860 ft hard sand; Lake Pelto State 4, lcn; No. 5, lcn; No. 6, capped piling; Bay St. Elaine 5, dk; No. 6, lcn; LLE-Bay St. Elaine 1, lcn; Lake Barre 5, came in flowing 60 bbls 28 gravity oil per hour at 3820 ft; No. 6, lcn; No. 7, capped piling; Four Isle 4, dr 5875 ft sticky shale.

WEST FELICIANA PARISH — Putnam Synd.'s Como Plantation 1, 54-1s-4w, dr stem stuck at 1100 ft, td 3740 ft.

NORTH LOUISIANA

Completions

BOSSIER PARISH—

Autrey Oil Co., McDade 1, 28-19-11	*	2802
H. I. Morgan & Shreveport-El Dorado P. L. Co., Weatherbee B-6, 22-19-11	*	1974

OUACHITA PARISH—

C. W. Frierson, Haynes 1, 9-17-3e..	*	2814

SABINE PARISH—

Dixie Oil Co., Tatum 1, 26-8-12....1045		2363
Texas Co., Largent 1, 24-8-12.....	*	2600

BIENVILLE PARISH — Triangle Drilling Co. et al's McDermott 1, 28-18-6w, set 6⅝ cas 2174 ft, dr shale 2964 ft. S. P. Borden et al's Thomas 1, 27-16-9w, sr to set 7-inch cas, td 4042 ft. Carter & Dobson's White 1, 9-18-6w, dr sandy shale 2112 ft. Olds & Smith's Brice 1, 15-16-6w, top Cane River 530 ft, did not make ds test in sandy shale at 2203 ft, cor sandy shale 2216 ft. Cagle Bros.' Lawhon 1, 15-16-8w, dk.

BOSSIER PARISH—Andrew's & Devlin's Nattin 1, 15-22-14, set 8-inch cas 1471 ft, cor 1580 ft. Autrey Oil Co.'s McDade 1, 28-19-11, dry abn, td 2802 ft. Johnson 1, 34-19-11, abn, td 60 ft. H. I. Morgan & Shreveport-El Dorado P. L. Co.'s Weatherbee B-6, 22-19-11, sw abn, td 1974 ft; Kendricks B-10, ne sw 22-19-11, sp dr 50 ft. Louisiana O. R. Corp.'s Bodcaw B-13, 11-19-11, whipped stocked 1750 ft, dr 1790 ft, old td 2028 ft.

CADDO PARISH—Texas La. P. L. Co.'s Wall 1, 33-23-16, set 12½-inch cas 840 ft, dr lime 2485 ft. French 1, sw nw 34-23-16, set 12½-inch cas 870 ft, dr 3567 ft, Hunter Land & Inv. Co.'s Fee 1, 32-18-14, sp, dr rock 934 ft. Rambaugh et al's Allison 1, 10-19-13, rig up.

CATAHOULA PARISH—National Drilling Co.'s Marsh McMillian 1, 26-9-6e, tested small show gas thru ds 1040-95 ft, tested sw 1095-1110 ft, dr 1600 ft.

CLAIBORNE PARISH—Triangle Drilling Co.'s Brownfield 1, nw ne 6-19-5w, 12½-inch cas 1513 ft, dr lime 3812 ft; J. W. Stevenson 1, sw se 6-19-5w, set 12½-inch cas 1505 ft, dr lime 3890 ft. Baird Bros. et al's Whittaker 1, 30-20-7w, sd 2200 ft. Bough et al's Alexandria 1, 27-20-8w, sd 2200 ft. Prairie O&G Co.'s F. B. Shackelford 1, se ne 30-23-5w, lcn.

CALDWELL PARISH—Hudson et al's Burton 1, 36-12-2e, sd wo 2012 ft.

CONCORDIA PARISH — La. G&F Co.'s Pittsfield Plantation 1, 41-8-10e, dr gumbo 1989 ft. Glassell et al's Pecania Plantation 1, 46-8-9e, lcn abn. Britton-Koontz Nat. Bank 1, 20-8-10e, lcn. Joe Marr et al's Maxwell 1, 35-3-8e, 8-inch cas 2000 ft, dr 3410 ft.

DE SOTO PARISH — Odell & Lawton's Tidwell 1, 11-13-14, cut off sw after cemt bottom, td 3095 ft. Holly Oil Co.'s Talbot 1, 9-13-13, dr 1600 ft. J. W. Clark's Tidwell 1, 22-13-14, set 6⅝ cas 2910 ft, 12 ft sand, dr plug, r to bottom, wo, td 2950 ft. W. H. Weichert's H. Smith 1, 31-14-15, dr 1400 ft. Standard Oil Co. of La.'s Farmer A-4, 5-13-13, set 6-inch cas 2868 ft, 6 ft sand, td 2890 ft; Dowling Bros. B-1, sw sw 32-14-13, dk. Neff et al's Dowling 1, se se 18-13-14, dk. S. A. Guy et al's Dowling Bros. 1, 31-14-14, sd 1354 ft. Ark. La. P. L. Co.'s Johnson 3, 1-11-14, dr 1729 ft.

NATCHITOCHES PARISH—W. M. Coates et al's Collins 1, 28-9-10, base chalk 2612 ft, sd wo 3600 ft. J. W. Cooper et al's Cooper 1, 35-11-10, fsh liner, td 1290 ft; Cooper 2-A, sd 1065 ft (formerly La. Delta Pecan Co. 1).

OUACHITA PARISH — C. W. Frierson's Haynes 1, se sw 9-17-3e, top Monroe gas rock 2462 ft, set 6-inch cas 2433 ft, dry abn, td 2814 ft.

RED RIVER PARISH—Lucky Strike Oil Co.'s Chaffraix 1, 33-12-10, ds recovered, coring 2835 ft. T. G. Shaw's Wilkinson 1, se se 4-12-10w, set 6-inch cas 2240 ft, making heads of oil, td 2850 ft.

RICHLAND PARISH—W. C. Feazel's Landrum 1, 6-16-7e, dk. Island O&G Co.'s Noe 1, 3-16-5e, set 6-inch cas 2350 ft, top Monroe gas rock 2365 ft, sd wo 2549 ft.

SABINE PARISH — Magnolia Pet. Co.'s Giaque 1, 26-7-14, dr hard lime 3753 ft. McDaniels et al's Batson 2, 16-8-12, sd 2136 ft. Loring Oil Co.'s Middleton 1, 26-8-12, set 6⅝ cas 2329 ft, dr 2502 ft; Middleton 2, 26-8-12, sp set 10-inch cas 103 ft, dr 1550 ft. Lacey Barkett Oil Co.'s D'Anna 1, 26-8-12, set 6⅝ cas 2194 ft, hfo heading occasionally, td 2412 ft. Lacey et al's Brown Lbr. Co. 1, 28-8-10, rig up. Lacey Prod. Co.'s W. M. Cooper 1, 30-8-11, lcn. A. H. Teat's Craig 1, ne ne 25-8-12, top marl 2329 ft, set 6⅝ cas 2329 ft, td 2330 ft. W. G. Gray et al's Fraser 1, nw sw 10-8-11, rig up. R. L. Gay, Tr.'s, Bowman-Hicks 8, 18-7-13, cemtd back to 2392 ft, wo cement set, old td 2552 ft; Bowman-Hicks 9, ne sw 18-7-13, sp set 10-inch cas 63 ft, dr 200 ft. D. H. Reddick et al's Scretchfield 1, 18-9-12, sd 3310 ft. Paramount O&G Co.'s Woolums 1, 11-6-12, set 6-inch cas 2310 ft. Zeke Lohman's Wyatt Lbr. Co. 1, 18-4-11, partly rigged up wo. Lohman & Walker's Hubley 1, 1, 21-7-11, top marl 2461 ft, reset 6-inch cas 2432 ft, td 2474 ft. Pelican Nat. Gas Co.'s La. Long Leaf 4, 4-7-11, pumping, wo gauge, td 2557 ft. La. Long Leaf 5, nw sw 4-7-11, coring 2325 ft; Sabine Lbr. Co. 5, nw ne 11-7-12, set 6-inch cas top marl 2322 ft, dr in. Phelps et al's Turner 1, nw nw 4-7-11, lcn. G. D. Neff, Tr.'s, Turner A-1, 4-7-11, set 6⅝ cas 2200 ft, tested dry, wo, td 2595 ft. Loring Oil Co.'s Garner 1, 4-7-11, set 6⅝ cas 2266 ft, bailed dry show oil wo td 2550 ft. Bowman-Hicks 13, 2-7-12, dr 1350 ft. Stacey et al's Polly 1, 18-8-12, rig up. Texas Co.'s Largent 1, 24-8-12, set 6¼-inch cas 2308 ft, dry abn, td 2600 ft. Longoria et al's Belton 1, 31-9-12, rig up. A. C. Glassell's Logan Oil Co. 1, 23-10-13, coring 1958 ft. Franks et al's Hays 1, 22-8-11, sd 1250 ft. David M. Lide's Ponder 1, 15-7-11, top marl 2393 ft, top chalk 2407 ft, tested dry show oil 2422 ft, arr deepen set 6-inch cas 2385 ft. Dixie Oil Co.'s Tatum 1, ne ne 26-8-12, set 6¾-inch cas 2334 ft, at top marl, elev 294 ft, flowing 1045 bbls oil day thru 7/16-inch choke, td 2363 ft; Parrott 1, se se 26-8-12, sd wo 2650 ft, top chalk 2364 ft, set 6-inch cas 2368 ft. Lyons et al's Williams 1, sw se 32-8-11, 6-inch cas 2261 ft, sd 2261 ft, drill collar in hole whipped stock 2024 ft, old td 2444 ft. Wilson & Sons' Gandy-Garrett 1, 4-5-12, dr 1050 ft. Teteco Oil Co.'s La. Long Leaf Lbr. Co. 1, 18-6-12, set 6⅝ cas 3985 ft, td 4077 ft, dr in. Tom David's Smith 1, 27-8-10, dr 1550 ft. Merritt et al's La. Long Leaf 1, 33-8-11, sd 1450 ft. Standard Oil Co. of La.'s Bowman-Hicks 1, 25-8-12, sp set 10-inch cas 102 ft. Tarver et al's Sabine State Bank 4, 26-8-12, set 6⅝ cas 2324 ft, bailed dry wo, td 2482 ft.

TENSAS PARISH—Seip et al's Fowler 1, 10-10-10e, sp dr 308 ft. A. R. Willis' Curry 1, 39-11-12, sd wo 2780 ft. Stovall Drilling Co.'s Miller 1, 18-10-10e, plugged back and set 6-inch cas at 708 ft, tested small show sw no gas 705-12 ft, wo, old td 1560 ft.

WEBSTER PARISH—D. H. Coyle, Tr.'s, Frazier 1, ne se 27-23-11, dk.

WEST CARROLL PARISH — Ark. La. P. L. Co.'s Griffith 1, ne nw 17-22-10, 10-inch cas 1301 ft, dr shale and bldrs 2715 ft.

MOUNTAIN STATES

MONTANA

BIG HORN—Embar Drlg. Co., 21-6s-36e, td dd from 3056 ft.

BROADWATER—Barth et al, near Winston, to res at 1000 ft.

CASCADE—Andover Oil Co.'s Floweree 1, se 20-21-2w, rig stand tools, to resume.

CHOTEAU—Coolidge & Coolidge, se 32-26-17e, Lehnfelt 1, sd 50 ft.

FALLON—Monarch Gas Co., 12-5n-59e, test gas 1885 ft.

FERGUS—Melton Corp., 1, se 24-21s-17e, no report. Northern States Oil Co.'s Woodward 1, se 20-14n-24e, dr 900 ft.

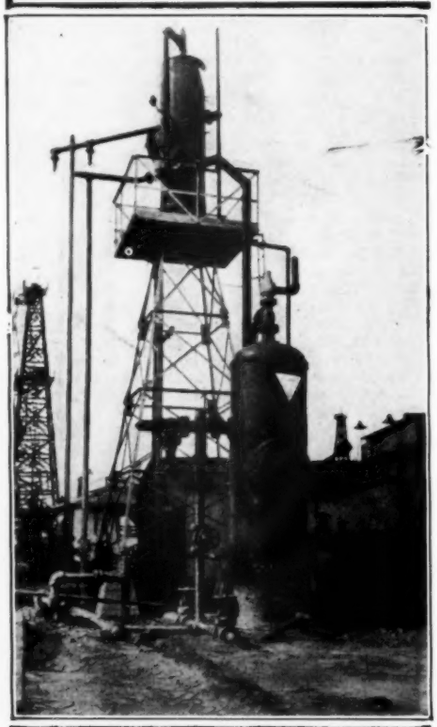
GLACIER—Glacier Oil Co.'s Omsberg 1, nw 33-35-5w, dr into gas sand 2714 ft. Texas Prod. Co.'s 1, 13-35n-6w, run 6-inch, td 2836 ft. Fulton Pete Corp.'s Blackfeet 1, ne 28-36n-12w, install Diesel engine, td 850 ft. O'Neil's Michaels 1, se 28-36-5w, dr 1775 ft. B. & H. Oil Co.'s Haines 1, se 2-34-6w, dr 300 ft. Jeffries-Hoerr, Dawson 1, ne 7-31-12w, dr bel 2610 ft.

GOLDEN VALLEY—Texas Pacific's 1, sw 21-8s-21e, shutting off water 1540 ft.

LIBERTY—Northland O&G Co.'s Yurman 1, 36-33n-6e, dr 3370 ft. Sunburst O&R Co.'s McLaren 1, se 9-37-6e, sd 3115 ft. Utopia Oil Co.'s Eleanor Assn. 1, sw 11-33-6e, wait pipe td 3190 ft. Perkins et al's Brown 1, nw 24-35-4e, cemt 12½-inch, td 475 ft. West. Nat'l Gas Co.'s 1, ne 23-37-4e, dr 1400 ft, nearing gas sand.

MUSSELSHELL — Minnesota-Flatwillow's

THOUSANDS



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Ivanhoe 1, 7-11-31, dr bel 1320 ft. Laffea Oil Co.'s 1, 6-10n-25e, dr bel 900 ft.

PETROLEUM — Oregon-Flatwillow's 1, 3-13n-26e, dd from first Cat Creek.

PHILLIPS — Thorsen & Bull Creek Dome Co.'s 1, 2-24n-23e, dr 798 ft.

PONDERA—Miller Bros.' Bruins 1, nw 17-28n-1w, rig up, spd. Oil Well Drlg. Co.'s Van Daele 1, ne 36-30w-38, ur 4215 ft.

WYOMING

BIG HORN Westland Oil, Inc., 1, 24-54-95, gas at 510 ft. Wisconsin Holdings, 5-55-97, sd 665 ft. Yellowstone Pete Co.'s 1, 7-57-97, oil show 4080 ft.

CARBON—Producers O&G Co., Blivens 1, 35-13-92, sd 2220 ft. Midwest's U. P. 27, 11-20-81, dr 475 ft.

CONVERSE—Converse O&G Co., 27-33-72, resum dr 1087 ft.

FREMONT—Texas Prod. Co.'s State 1, 36-44-96, taking well over from contractor, dr on iron, td 4485 ft. Producers & Refiner's 1, 33-34-92, ream, 4554 ft. Yellowstone Oil Co.'s 1, 15-38-92, dr 185 ft. Val B. Maghee et al's 1, 35-33-99, dr bel 1000 ft. Big Horn Oil Co., 15-38-94, rig.

HOT SPRINGS—Midwest Ref. Co.'s Weeks 8, 6-44-98, strmmg 4340 ft. Gebo Con.'s 1, se 23-44-95, sd 1410 ft with oil showing.

JOHNSON — United Oil Co.'s 7-47-92, sd 1700 ft.

LINCOLN—Mtn. Oil Corp.'s 1, 36-25-116, ur 580 ft. Wyo. Prod. Co.'s 1, 14-24-113, set 12½-inch at 1030 ft.

NATRONA—Cuyler Oil Co., sw 24-36n-86w, 10M gas 1305 ft. Summit Oil Co., nw 21-33n-80w, run cas 650 ft. Tarrant et al, ne nw 25-31-82, dr bel 300 ft. Golden West Oil Co., 36-36-81, dr 1100 ft. Midwest's 11, nw 32-34n-77w, bldg rig.

NIOBRARA—West Va. Synd., ne 7-35-62, ur to 978 ft.

PARK—Resolute Oil Co., 17-27-101, dr bel 7900 ft. Cody Pete Co.'s Danker 1, se 22-57-98, rig.

SWEETWATER—Vermillion Oil Co.'s 1, se 16-12-99, dr 3175 ft.

UINTA—Park City O&G Co., nw 6-15-113, dr bel 2000 ft.

WESTON—Gose Synd., 1, 28-47-65, stand. Updike et al's Fiddler Creek 1, 11-45-64, sd 1200 ft. LeFaivre Oil Synd., se 29-45-68, spud.

POWDER RIVER—Creel et al, 7-8s-50e, dd to Muddy to set cas at 1000 ft.

ROSEBUD—Prairie O&G Co.'s 1-X, 26-10-39e, dr bel 1660 ft, gray shale. Prairie O&G Co.'s 1, on Contract 4, 28-10-38, prep to res at 501 ft.

SHERIDAN — Sheyenne O&G Co.'s 1, nw 15-36n-53e, to res 1400 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, to resum at 300 ft.

TOOLE—Internat'l Roy. Hold. Co.'s 1, 26-35-3e, sd 2410 ft.

VALLEY—Perkins-Jones, Opheim 1, 31-37n-38e, dr bel 1200 ft.

YELLOWSTONE—Broadview O&G Corp., nw 18-3n-23e, mvg in.

NEW MEXICO

DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, dr 3052 ft.

LEA—Hobbs High Co.'s State 1, 35-18s-38e, stand 4206 ft.

LUNA—Angelus Oil Min. Ass'n, se 20-21s-10w, dr 5860 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, sd 3255 ft. Wms. et al's ATSF 1, sw 19-18n-8w, dr 1900 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, dr 1005 ft.

QUAY—Silverstein et al's Wetzel 1, 29-12n-33e, stand 85 ft.

RIO ARRIBA—Berringer et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 15-29n-7w, dr 410 ft.

SAN JUAN—Dorothy Oil Co.'s Terwilliger 2, 29-30-9w, prep to resume 1750 ft. Kutz Canon O&G Co.'s Day 1, se 20-28n-10w, gas at 2018 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 23-31-16w, sd 2525 ft. Rio Grande Dev .Co.'s Lanier 2, 9-29-11w, stand 1380 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, dr 3500 ft. Murchison Oil Co.'s Angels Peak 4, se 11-28-11, dr 1915 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2355 ft. Starr

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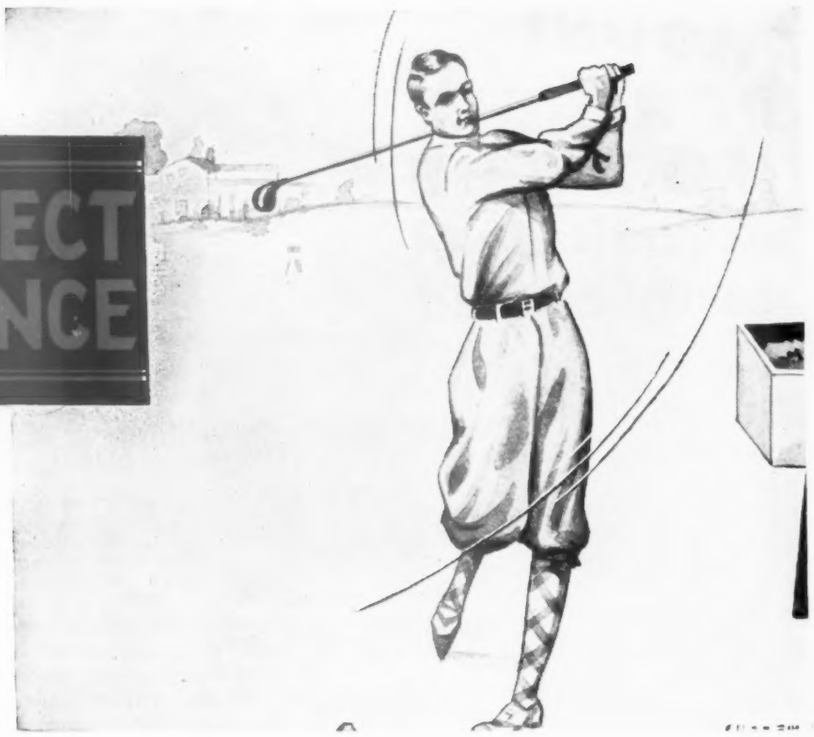

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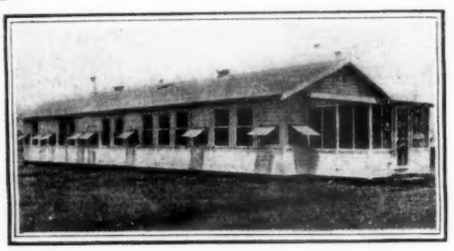

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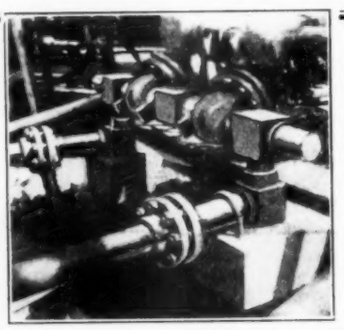

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Oil Co.'s Adams 1, ne 25-17n-16e, 8¼-inch at 3271 ft. Cibola Pete Co.'s Crown 1, se 9-13n-14e, dr 685 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 21-12n-22e, wtg for cas 1200 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, stand 1643 ft. J. B. Witt O&G Co.'s Kutchem 1, 12-17s-7e, sd 1219 ft.

VALENCIA—Acme Oil Co.'s N. M.-Ariz. Land Co.'s 1, 26-6-3, stand 4690 ft. Harlan et al's Harlan 1-A, 5-6n-2e, dr 3630 ft.

COLORADO

ADAMS—N. M. Slatt's Hills 1, se 27-2-64w, 10-inch at 2427 ft.

ARAPAHOE—McDabb Dr. Co.'s Fitzsimmons 1, 7-45-55, swedg 6⅝-inch, td 5692 ft. Merritt et al, U. P. 1, nw 17-5s-64w, stand 1600 ft.

ARCHULETA—Stand. of Colo., Fitzhugh 1, se 34-33n-1e, stand 520 ft. Stand. of Colo., Crowley 1, 10-32-2, gas 248 ft.

BACA—A. R. Jones Oil & Optg. Co.'s Boice Cattle 1, 22-34s-42w, stand 3800 ft.

BOULDER—Reliance Oil Co.'s Anderson 1, se 18-3n-70w, abd 2320 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, stand 1100 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, carry 6⅝-inch at 3742 ft.

LARIMER—Smith et al's State 2, ne 36-12-70w, dr 110 ft. Donohoe et al, Maxwell 1, 25-8n-70w, dr 960 ft.

LA PLATA—McGarr Pete Co.'s Mesa 1, ne 27-33n-12w, more oil show 3300 ft. Klein Pete Corp.'s Olbert 1, se 9-35n-12w, fsh 2715 ft. Murchison Oil Co.'s Doescher 1, nw 9-33n-13w, dr 1015 ft.

LINCOLN—Kelley Oil Co.'s State 1, 26-14n-57w, stand 3415 ft.

MOFFAT—Vermillion O&G Synd.'s 1, se 23-9n-100w, stand 750 ft. Midwest's Hannawalt 24, 4-6n-92w, completed as gasser 3080 ft. Mtn. Fuel Supply's State 2, tract 37-12-100, dr 600 ft. S. H. Keoughan et al., State 1, se 15-4n-101w, wait cas 2647 ft.

MONTEZUMA—Haller et al, Haller 3, ne 33-36n-14w, test 710 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-7w, dr 3555 ft.

PUEBLO—Kuykendall Oil Corp.'s Boescher 1, 7-22-66, dr at 810 ft.

PARK—So. Park Oil Co.'s Milligan 1, se 13-9s-76w, wtg pipe 1580 ft. So. Park O&G Co.'s Esche 1, ne 5-9s-76w, dr 646 ft.

ROUTT—Gorham et al's Omholt 1, 29-4n-87w, ready to spud.

WELD—Platte Valley Pete Corp.'s Patterson 1, nw 24-6n-61w, show 300 bbls 6666 ft. Eastman Oil Co.'s Steel 1, ne 14-2n-67w, sd 165 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4s-56w, co 1505 ft.

KANSAS

STEVENS COUNTY — Liberal Gas, Unknown 1, c n½ ne, 4-35-34w, 12-inch 500 ft, dr 2600 ft.

SUMNER COUNTY—Davidson et al, Strickland 1, sw se 12-34-1w, rig.

MORTON COUNTY — Hydraulic Oil Co., State land 1, nw se, 22-34-34w, td 3200 ft.

HARPER COUNTY—Atkinson et al's Misak 1, se c 25-32-6w, 8-in 4635 ft rust.

SUMNER COUNTY—Disney et al's Foy 1, c e½ se 14-34-1w, rig.

STEVENS COUNTY—Western Prod.'s Fee 4, c ne 6-33-36w, dr 2300 ft.

SUMNER COUNTY—Magnolia's Shriner 1, nw sw 9-33-2e, 10-in 1981 ft 8-in 2667 ft dr 3502 ft.

STEVENS COUNTY—McNabb & Mid-Kansas, Rinehart 1, c ne 23-32-39w, rig. Argus Gas Co.'s Ponder 2, c nw 10-32-38w, dr 1083 ft. Western Prod. Co.'s Ponder 1, c ne 10-32-38w, 8-in 2495 ft rust.

COWLEY COUNTY—Tom Fine's Boyd 1, nw ne 32-32-4e, 12-in 1265 ft sd 2650 ft. Roth and Faurot's Reidy 1, c sw nw ne 8-32-4e, td 912 ft fshg. blr.

HARPER COUNTY—Beeler et al's Bear 1, c ne ne 21-21-6w, td 1830 ft sd

KIOWA COUNTY—Phillips-Prairie's Bean 1, ne se 10-30-17w, 3950-55 ft hfw, 4115 ft dr 4583 ft.

BARBER COUNTY—Allison & Fitzwilliams' Kumberg 1, c se sw se 2-30-12w, 8-in 3540 ft. td 4305 ft cmt cave.

GRANT COUNT—McKenna et al's Sullivan 1, ne c 12-29-28w, dr 1600 ft.

SEDGWICK COUNTY — Buck et al's McNanaman 1, c ne nw nw 2-20-1e, rig.

ELK COUNTY—Alladin's Donnell 1, ne se sw, 26-29-10e, Wilcox 2386-24-11 s. o.

KIOWA COUNTY—McKenna et al's Ralston 1 c ne 14-28-20e, ru, sd.

SEDGWICK COUNTY — Branson et al's Kincaid 1, se nw nw 4-28-1e, spd.

BUTLER COUNTY—Farrell et al's Sutter 1, nw c 18-28-7e, dr 1020 ft.

KINGMAN COUNTY—Skelly's Miles 1, ne c 30-27-10w, 2005-20 ft est. ¶6 gas ur 12-in.

SEDGWICK COUNTY—Streeter & Stearns' Tobin 1, c sw se ne 5-27-2e, spd, sd.

GREENWOOD COUNTY—F. Konkay et al's Rook 1, nw ne ne 7-27-12e, td 1836 ft sd.

PRATT COUNTY — Wilcox's Unknown 1, sw nw 7-26-15w, td 4395 ft hfw, csg. trbl.

RENO COUNTY—Valerius's Stevens 1, c ne se ne 6-26-7w, T. Wilcox 4196 ft 4230 ft hfw, sd 4266 ft.

FORD COUNTY—Swain et al's Kenthorn 1, c nw 21-25-24wn 6-in 3775 ft dr 4200 ft.

RENO COUNTY—Shell et al's Ropp 1, nw c 11-25-5w, chat. 3496-99 ft. co.

GREENWOOD COUNTY — Staats et al's Swan 1, ne nw 3-35-12e, spd and sd.

BUTLER COUNTY — Empire & McCullough's Lilley 1, c sw nw nw 23-23-5e, 10-in 1200 ft, 1640-75 ft hfw dr 1815 ft.

STAFFORD COUNTY—Boucher's Groves 1, ne c 9-22-11w, 6-in 2965 ft, sil. 3542-85 ft. hfw, sd.

RENO COUNTY—Alco Royalty Co.'s Kinney 1, se c 16-22-7w, dr 3475 ft. Braden et al's Theisen 1, se ne 6-22-4w, 8-in 2914 ft dr 2975 ft.

MARION COUNTY—Maidwell's La Master 1, nw c 31-22-4e, ru.

COFFEY COUNTY—Hegberg et al's Kroft 1, se sw se 30-22-14e, dr 310 ft. McGreegger et al's Wood 1, c ne nw sw 20-22-15e, sd 650 ft. Roberts et al's Hay 1, sw se nw 32-22-15e, sd 1125 ft.

RICE COUNTY — United Pet. Co.'s Wellman 1, ne c 29-21-9w, 10-in 2090 ft 2518 ft hfw, dr 2895 ft.

MARION COUNTY — Magnolia's Davis 1, se nw 18-21-2e, Wilcox 3375-95, sil. 3435-43 hfw.

PAWNEE COUNTY — Phillips' Cuthberson 1, c ne 27-20-18w, dr 2630 ft.

BARTON COUNTY—McCool et al's Tsern 1, c sw se ne 12-20-11w, 12-in. 900 ft. sd 1600 ft.

RICE COUNTY—Skelton Oil's Ott 1, c se se 16-19-14w, spd. Muth Brothers's Beyers 1, ne nw 21-19-9w, spd.

McPHERSON COUNTY — United Pet. & Shell's Kaegi 1, ne c 20-19-1w, lcn. Henderson & Holden's Sommerfield 1, c ne sw 23-19-1w, rig.

MARION COUNTY—Marshall et al's Higgins 1, ne c 33-19-5e, rig.

LYON COUNTY — Griffith et al's King 1, nw c 8-19-10w, 12-in. 910 ft sd.

RUSH COUNTY—Syndicate Oil's Tannen 1, c sw 11-19-16w, dr 345 ft.

RICE COUNTY—Jasper & Beschka's Cupp 1, sw ne 22-18-9w, gas mudded off, 10-in 2030 ft. dr 2520 ft.

McPHERSON COUNTY — Alladin Pet.'s Larson 1, c nw 22-18-4w, rig.

MARION COUNTY—Alladin Pet.'s Rudolph 1, nw ne 36-18-3w, rig.

McPHERSON COUNTY—Slick et al's Sandell 1, c sw sw 35-17-3w, spd.

MARION COUNTY—Alladin Pet.'s Koch 1, nw ne 36-17-3e, rig.

MORRIS COUNTY—Urchell et al's Bersuch 1, c nw se nw 10-17-7e, ru.

RUSH COUNTY—Prairie's Leiker 1, c nw sw sw 5-16-13w, 3337-52-in 1400 ft O.I.H. exhausted on swab and hfw, dr 3676 ft.

ELLSWORTH COUNTY—Alladin & Marland's Barecky 1, c nw 3-16-10w, dr 1390 ft. Alladin et al's Stoddenberg 1, c sw 22-15-10w, ru.

MORRIS COUNTY—Urschell et al's Scott 1, ne sw 6-16-6e, sd 2420 ft.

MORRIS COUNTY—Pratt et al's Whiting 1A, nw sw sw 24-16-6e, T. lime 2060, dr 2425 ft. Hankenson et al's Sessnum 1, sw se 24-16-9e, rig.

RUSSELL COUNTY—Empire's Sherwood 1, c se nw nw 21-14-13w, 2330-35 ft so, dr 2580 ft.

ELLSWORTH COUNTY — Milton et al's Kester 1, se ne 6-14-9w, sd 330 ft.

SALINE COUNTY—O-Sampson et al's Suderdorf 1, ne se 30-14-2w, fog.

DOUGLAS COUNTY — Steinbushel et al's Unknown 1, sw ne nw 34-14-21e, td 1110 ft sd.

GOVE COUNTY—Valerius et al's Todd 1, nw c 24-13-27w, 6-in. 4174 ft 4469-65 ft, 800 W.I.H. ur 6-in.

RUSSELL COUNTY — Austin Drlg. Co.'s Rockefeller 1, se c 6-13-12w, sd 2740 ft.

SALINE COUNTY—Twin Mounds Oil Co.'s Weis 1, c w½ ne nw 20-13-4w, td 2500 ft sd.

DICKINSON COUNTY—Severs et al's Livingood 1, ne sw 13-13-2e, dr 2641 ft.

GOVE COUNTY — Johnson & Atlantic's Wright 1, c se ne 11-12-27w, 13-in 1790 ft, dr 1825 ft.

PAWNEE COUNTY—Central Commercial's Helms 1, se ne 2-12-20w, dr 3916 ft fsg.

RUSSELL COUNTY—Gilbreath et al's Bratton 1, c ne 33-11-13w, sd 2155 ft.

ROOKS COUNTY—Streeter & Stearns' Conger 1, c se nw ne 16-10-16w, td 2824 ft ur 8-in.

CLAY COUNTY—Nebraska Oil's Tivier 1, sw c 19-8-3e, chat 2198-2213 ft, stg. 6-in 2275 ft.

MARSHALL COUNTY — Swicker & Simcox's Remple 1, c n½ nw 22-4-9e, dr 1295 ft.

WASHINGTON COUNTY — Simcox's Penwell 1, nw se ne 16-3-3e, dr 1570 ft.

RAWLINS COUNTY—Danciger et al's Unknown 1, sw c 3-2-35w, rig.

MARSHALL COUNTY — Balzier et al's Runkel 1, se nw 13-2-6e, spd. and sd.

OKLAHOMA

WOODS COUNTY—T, 27n, R 16w, Sec 33, Sinclair's Share 1, c ne sw, hfw 7160-7280 ft, td, pb shot 100 qts 5080-5100 ft, 3500 ft water in hole, pb to 4885 ft to shoot again.

ALFALFA COUNTY—T, 27n, R 11w, Sec.

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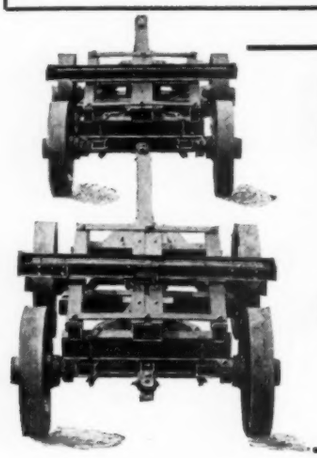

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12, Smith Bro.'s Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T, 27n, R 2e Sec. 9, Mumner et al's Sornick 1, nw c se, lcn. T, 27n, R 2e, Sec. 17, Blankenship et al's Hansen 1, sw nw sw, shot 10-20-40 qts 3587-97 ft, pump 15 bbls.

HARPER COUNTY—T, 26n, R 24w, Sec. 14, Sinclair's Howell 1, c sw sw, td 8590 ft pb 6700 ft shot 50 qts 5350-5400 ft ¶12 gas and 50 bbls gasoline per day. Completed.

GRANT COUNTY—T, 26n, R 5w, Sec. 25, Bu-Vi-Bar et al's Hurst 1, c sw, show oil and water 5215-18 ft, drlg. 5645 ft.

KAY COUNTY—T, 26n, 1w, Sec. 32, Boucher et al's Jefferson 1, ne c sw, sd 1775 ft.

HARPER COUNTY—T, 25n, R 20w, Sec. 12, Empire's Bruce 1, sw c ne ne sw, slight show oil 7161-63 ft sd 7795 ft.

WOODS COUNTY—T, 25n, R 15w, Sec 10, Bu-Vi-Bar et al's Fee 1, se c sw, td 6104 ft, pulling casing to abandon.

GRANT COUNTY—T, 25n, R 4w, Sec. 22, Cowden's Vollmer 2, ne c se ne sw, lost tools sd 5640 ft.

ALFALFA COUNTY—T. 24n, R 11w, Sec. 14, J. V. Bailey et al's Acre 1, c sw ne, sd 4660 ft.

GARFIELD COUNTY—T, 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, se c nw, dr 5750 ft.

NOBLE COUNTY—T, 21n, R 1e, Sec. 12, Barnsdall et al's Minks 1, nw c sw, ur 10-in 2390 ft.

WOODWARD COUNTY—T. 23n, R 17w, Sec. 23, Transcontinental & Prairie's Wilbur 1, ne c, td 7425, dry and abandoned.

BLAINE COUNTY—T, 19n, R 10w, Sec. 13, Washoma Pet. Co.'s Phillips 1, c nw sw, sd 3940 ft.

LOGAN COUNTY—T, 18n, R 3w, Sec. 33, Healey & Consolidated Drlg. Co.'s Quier 1, se c sw, sd 3970 ft. T. 17n, R 4w, Sec. 34, Eason Oil Co.'s Katchor 1, sw c ne sw, sand 4918-42 ft, flowed 680 bbls. T. 17n, R 2w, Sec. 24, Slick, Ramsey & Prairie's Jones 1, c se nw, drlg 5231 ft. T, 17n, R 1e, Sec. 22, Slick & Prairie's Sims 1, ne c sw se, hfw 5165-5233 ft, td sd.

KINGFISHER COUNTY—T, 16n, R 7w, Sec. 6, Gault-Brown's Boch 1, c nw se, (owdd) dr 6750 ft.

LOGAN COUNTY—T, 16n, R 1w, Sec. 33, Prairie & Slick's Morgan 1, c nw ne, td 5795 ft, d&a.

KINGFISHER COUNTY—T, 15n, R 5w, Sec. 23, Prairie & Slick's Wright 1, c nw sw, dr 5850 ft.

OSAGE COUNTY—T, 28n, R 7e, Sec. 4, L. G. Stanley et al 1, se c sw, moving in machine.

PAWNEE COUNTY—T, 23n, R 5e, Sec. 15, Cochran et al's McFadden 1, ne c sw, rig. T, 22n, R 3e, Sec 26, Wentz Oil Corp.'s Lillie 1, se c sw ne, dr 2840 ft. T, 22n, R 5e, Sec. 2, Sherry et al's Milsap 1, se c sw, rigging up.

PAWNEE COUNTY—T, 20n, R 5e, Sec. 1, Flynn, Morgan et al's Freeman 1, nw c dr 3300 ft. T, 20n, R 5e, Sec. 22, J. M. Scott et al's Jones 1, sw c ne, hfw 3794-3824 ft d&a.

LINCOLN COUNTY—T, 14n, R 6e, Sec. 5, Atlantic's Ryan 1, se c nw, water 4655-75 ft d&a. T, 13n, R 6e, Sec. 8, Atlantic's Beebe 1, sw c ne sw, lcn.

OKFUSKEE COUNTY—T, 12n, R 9e, Sec. 3, Tulsa Oil Co. et al's Davis 1, se nw sw, hfw 2765-80 ft, ur 8-in. T, 12n, R 9e, Sec. 36, Henry Oil Co.'s Harjo 1, nw c, Wilcox 4124-57 ft, water, sd. T, 12n, R 10e, Sec. 3, Shepperd et al's Sheppard 1, se nw sw, sd 3690 ft.

MUSKOGEE COUNTY—T, 11n, R 19e, Sec. 21, E. Mills et al's Martin 1, nw c se, sd 1001 ft.

PITTSBURG COUNTY—T, 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, sw c nw se, shot 130 qts 5660 ft. sd. T, 8n, R 14e, Sec. 14, C. D. Cannady's Smith 1, nw c, rig. T, 7n, R 13e, Sec. 18, Apex Oil Co.'s Walker 1, nw c se, csg, trble 1455 ft.

OKLAHOMA COUNTY—T, 14n, R 3w, Sec. 32, Mid-Kansas's Messer 1, sw c, shot 90 qts 6690-6760 ft, shot 170 qts, flow 425 bbls. T, 12n, R 4w, Sec. 17, C. F. Cuniff Trustee's St. Joseph Orphanage 1, sw ne sw se, sd 6700 ft td. T, 11n, R 2w, Sec. 3, Ryan Consolidated's Lawton 1, ne c nw, td 6558 ft, d&a.

McCLAIN COUNTY—T, 7n, R 2w, Sec. 22, Prairie & Slick's Perkinson 1, sw c nw, dr 4590 ft.

CLEVELAND COUNTY—T, 6n, R 1e, Sec.

20, Harris & McNeal's Corbett 1, c sw ne, td 6518 ft slight show oil and water, sd.

OKFUSKEE COUNTY—T, 11n, R 8e, Sec. 11, Carter et al's Keys 1, sw ne sw, dr 3640 ft.

POTTAWATOMIE COUNTY—T, 10n, R 4e, Sec. 10, Shell's Baker 1, nw c se, lcn.

SEMINOLE COUNTY—T, 10n, R 6e, Sec. 19, Bunte et al's Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T, 9n, R 4e, Sec. 14, C. F. McGee et al's Eckridbe 1, se c nw, lcn.

HUGHES COUNTY—T, 9n, R 12e, Sec. 29, Canady's Kanard 1, nw c sw, sand 4468-4506 ft, hfw pb 3540 ft sd.

POTTAWATOMIE COUNTY—T, 8n, R 3e, Sec. 3, Texas' Knight 1, sw c se, sand 5395-5407 ft water, d&a. T, 7n, R 3e, Sec. 19, Droppleman & Burke's Fundis 1, se c ne, dr 3720 ft. T, 6n, R 5e, Sec. 5, Robinson & Hick's Crouch 1, nw c sw, dr 2745 ft.

SEMINOLE COUNTY—T, 6n, R 7e, Sec. 9, Neal & Milton's Thomas 1, nw c ne sw, 6-in at 2833 ft, td 2965 ft.

HUGHES COUNTY—T, 6n, R 9e, Sec. 20, Gilcrease Oil Co.'s Deere 1, ne c sw, Machine.

ROGER MILLS COUNTY—T. 13n, R 21w, Sec. 10, Richfield O&R's Hiatt 1, se c rig. T, 12n, R 24w, Sec. 23, Bucy & Stone's Williams 1, c sw, sd 2243 ft.

CANADIAN COUNTY—T, 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd 150 ft.

CADDO COUNTY—T, 9n, R 13w, Sec. 18, J. J. Wright & Shell's Boys 1, ne c lcn.

BECKHAM COUNTY—T, 8n, R 22w, Sec. 20, Carson et al's Denby 1, sw c se ne, td 1558 ft, d&a.

GREER COUNTY—T, 7n, R 22w, Sec. 1, Roy Good et al's Cliffe 1, nw c sd 1265 ft. T, 7n, R 21w, Sec. 23, H. A. French et al's Murphy 7, sw nw se, dr by tools 375 ft.

CADDO COUNTY—T, 6n, R 11w, Sec. 24, Simms & J. R. Wrightsman's Cobza 1, sw c nw, dr 3165 ft.

HARMON COUNTY—T, 4n, R 24w, Sec. 17, Harmon-Tex. Oil Co.'s Headley 1, ne c, sd 2507 ft.

COMANCHE COUNTY—T, 3n, R 9w, Sec. 3, Okla. Nat. Gas Co.'s Doebel 1, ne c sw sw sw, sd 1450 ft.

HUGHES COUNTY—T, 5n, R 10e, Sec. 30, Erwin et al's Jones 1, se c ne, drlg, on iron 4275 ft. T, 5n, R 11e, Sec. 15, J. J. Wright's Roberts 1, se c sw, sd 1645 ft.

COAL COUNTY—T, 3n, R 9e, Sec. 26, Blackwell's Gumm 1, nw c dr 4415 ft.

ATOKA COUNTY—T, 3n, R 10e, Sec. 18, Brookshire et al's Guinn 1, nw c sd 80 ft.

CARTER COUNTY—T. 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co.'s Anderson 1, c se ne se, dr by pipe 2400 ft, td 2580 ft.

LOVE COUNTY—T, 6s, R 3w, Sec. 20, Harry Hobb's Steele 1, sw c ne ne sw, sd 3130 ft.

BRYAN COUNTY—T, 6s, R 7e, Sec. 14, W. A. Johnson's Ussery 1, se c, sd 325 ft. T, 6s, R 9e, Sec. 35, C. P. Bush Commerce Trust Co., ne c, sd 600 ft. T, 7s, R 10e, Sec 8, Bryan Oil Co.'s Childs 1, ne c se ,sw, sd 475 ft.

ARKANSAS

Completion

CLEBURNE COUNTY—
Cosden Oil Co., Donithan Lbr. Co. 1, 19-9-10 ..... * 4360

CHICOT COUNTY—H. R. Smith's Lytle 1, 31-18-3, arr make ds test 2891-2903 ft, td 2903 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, nw se 4-20-8, 10-inch cas 303 ft, tested est. 1 mil ft gas 280-303 ft, dr 330 ft.

CLEBURNE COUNTY—Cosden Oil Co.'s Donithan Lbr. Co. 1, 19-9-10, junked abn in black shale, td 4360 ft. Donnell et al's Fee 1, 33-11-9, fsh bailer 3640 ft, td 3640 ft.

COLUMBIA COUNTY—J. W. Olvey et al's Kate George 1, nw sw 19-18-20, sp setting 12½-inch cas 290 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3n-19w, dr lime 3765 ft.

HOT SPRINGS COUNTY—John Watkins, Tr.'s, Cunningham 1, 11-5-16, sp dr 100 ft. Cleary Bros. et al's Hinson 1, 19-4s-16w, set 6⅝ cas 1306 ft, sand 1352-54 ft, bailed 20 bbls fluid, 50 per cent oil, sd cur titles, td 1354 ft.

JOHNSON COUNTY—Ark. La. P. L. Co.'s Kelly 1, sw se 14-10-24, set 8-inch cas 1675 ft, td 1675 ft. Hudson 1, se se 14-10-24, dr hard sand 1120 ft. Blackwell O&G Co.'s Wyver 1, 21-8-23, jaring out 6-inch cas 2100 ft, td 5600

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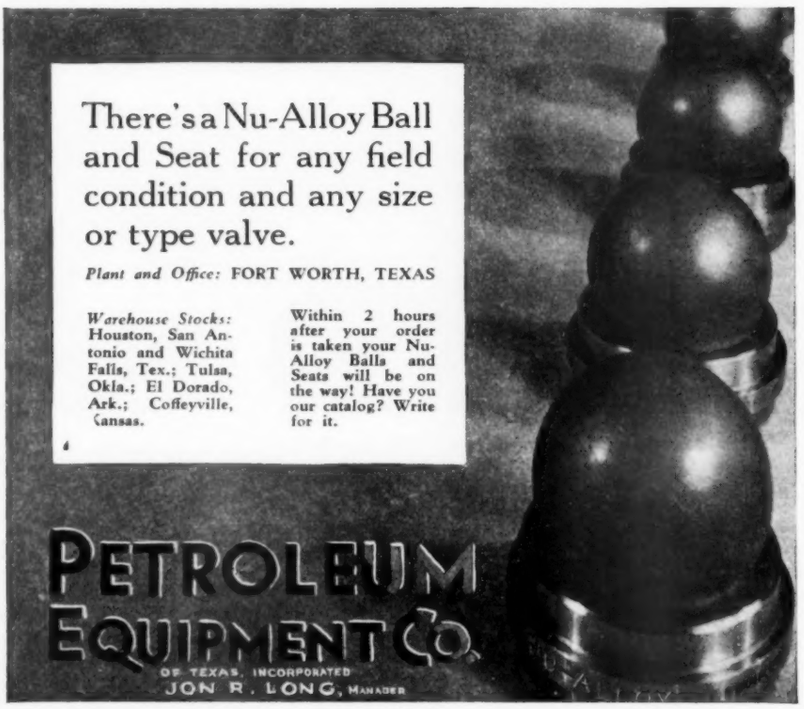
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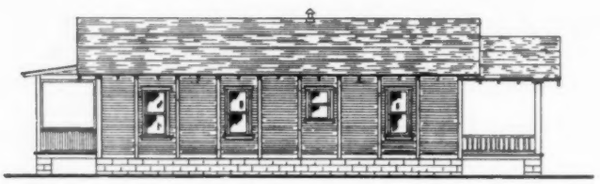

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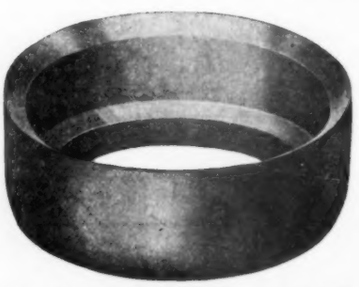

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CORRY, PA.

ft. Conn Gables et al's Holing 1, 20-8-25, sd 2238 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig up. McIver et al's Hattle 1, nw ne 1-20-26, dk pat.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY—Buck Oil Co.'s Taafe 1, 25-12-32, sd 2505 ft.

LINCOLN COUNTY — B. F. Thompson, Tr.'s, McGehee 1, 8-8.7, sd partly rigged up.

LOGAN COUNTY—Ark. La. P. L. Co.'s Jno. Jansen 1, ne ne 35-8-24, rig up. M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, ur 5 3/16-inch cas 3570 ft, td 3610 ft.

MADISON COUNTY—J. W. Baxter's Hallem 2, cent. sec. 17-16-26, r to bot 275 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, tested 125 bbls sw 2814 ft, 1 per cent oil, coring oil sand and shale 2830 ft, set 6⅝ cas 2792 ft. Lenz et al's Johnson 2, 24-15-26, coring 3010 ft; Johnson 3, ne nw 24-15-26, dk. Bullock Oil Co.'s Hervey 1, se ne 33-14-26, sp set 12½-inch cas 152 ft. East Texas O&G Dev. Co.'s Harvey 1, 2-15-26, set 10-inch cas 150 ft, sd 890 ft. O'Mara et al's Person 1, 31-15-25, lcn. Fitzwater et al's Beck 1, sw se 33-135-26, sp set 10-inch cas 85 ft. Salzer & McRae's Rose 1, ne nw 9-16-26, set 10-inch cas 98 ft.

OUACHITA COUNTY — Belmont et al's Dean 1, 16-15-17, top red beds 2765 ft, cor sand and ash 2865 ft. A. B. Turner, Tr.'s, Brown 1, 23-15-18, top Nacatosh 1663 ft, tested 55 joints mud with show oil thru ds 2172-78 ft, sdtr ds at 2183 ft, td 2183 ft. Graves et al's Walker Tr. 1, sw sw 9-14-18, top Nacatosh 1352 ft, set 6⅝ cas 1845 ft, sandy oil shale 1869-73 ft, wosr, td 1873 ft. Copenhaver et al's Elliott 1, se se 11-15-17, set 10-inch cas 62 ft sd cur titles.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, show heavy oil 567 ft, dr 1270 ft.

POPE COUNTY—Ark. La. P. L. Co.'s McFadden & Brooks 2, ne sw 15-9-21, set 13⅜ cas 1900 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, fsh tools, td 1530 ft. Ark. Valley Gas Co.'s Turner 1, se se 27-5n-30w, lcn.

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29, tested sw, wo, td 3515 ft. Mansfield Gas Co.'s Fee 1, 1-4n-31w, dr hard sand 1750 ft. Ozark Nat. Gas Co.'s A. L. Davis 1, ne nw 27-8-30, rig up. Lavaca O&G Co.'s Davis 1, nw ne 29-8-30, set 8-inch cas 200 ft, dr 600 ft.

UNION COUNTY—Hickman et al's Hogg 1, 35-16-17, top Graves sand 2351 ft, sd 2550 ft. Marine Oil Co.'s W. B. Thompson B-2, 10-18-13, lcn abn. W. B. Thompson A-5, sw ne 10-18-13, dk; P. Winn Est. F-1, 10-18-13, hole full fluid, 50 per cent sw, arr blow with air, set 6⅝ cas 3595 ft, td 3604 ft. Oilfields Corp.'s J. A. Simmons 1, nw nw 13-18-13, dry thru ds in 8 ft sand 2301 ft, arr deepen. Rice et al's Whatley 1, 7-17-15, sd 92 ft. Malloy & Co.'s Burns 7, nw nw 31-17-15, set 8⅝-inch cas 2148 ft, dr sand 2182 ft. J. E. Crosbie, Inc. et al's G. L. Murphy 1, 13-16-16, 800 ft 20.6 gravity oil in hole, 6⅝ cas 2735 ft, sand 2738-40 ft, wosr, td 2740 ft. H. L. Hunt, Inc.'s. Swilley 5, ne ne 28-16-16, set 6⅝ cas 2678 ft, td 2685 ft. J. E. Trammell 1, sw nw 28-18-12, old well dr deeper, cor 4052 ft.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13-29, dr 1167 ft. Lincoln Lease Holding Synd.'s Townsite 1, 30-15-32, to 1500 ft. C. H Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, ta 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-21, fsh tools, td 5710 ft.

MISSISSIPPI

Completion

RANKIN COUNTY (Jackson Dist.)—Jackson Royalties, Inc., Pate 1, 12-5-1e . . . . . ¶40 2405

ALCORN COUNTY — Alcorn Pet. Co.'s Matthews 1, 14-2s-7e, fsh, td 2735 ft.

ATTALA COUNTY — Arkansas-Louisiana P. L. Co.'s Moore 1, se nw 2-15n-5e, mvg in rig.

CLAY COUNTY—Ohio Oil Co.'s Cantrell

1, ne ne 16-15-5e, elev 270 ft, set 13⅜ cas 1389 ft, dr black shale and broken lime 1710 ft.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 30-13-3, driv 8¼-inch cas to 1495 ft.

GRENADA COUNTY—Carter Oil Co.'s Dubard 1, nw nw 18-22-4e, dk.

HINDS COUNTY (Jackson Dist.) — Mrs. Ella Rawls Reeder's State Land 1, 25-6-1e, sd 2905 ft. Jackson O&G Co.'s Central Cotton 1, 3-5-1e, dk; Mayes 1, plugged back to 2450 ft, plug drilled out to 2466 ft, made est 35 mil ft gas, shut in wo, td 2585 ft. Love Pet. Co.'s Morton 1, 34-6-1e, rig up; Maley 1, se nw 15-5-1e, elev 257.3 ft, top Midway shale 2387 ft, top Midway chalk 2487 ft, set 6⅝ cas 2487 ft, made 13.1 gravity oil and sw by heads, wosr, td 2495 ft. Miss. Tex. Oil Co.'s Negro Fair Assn. 1, nw se 28-6-1e, top Midway shale 2420 ft, set 6-inch cas, cas parted, td 2497 ft. Tri-State O&G Co.'s Wilson 1, 23-6-1e, dk. Universal O&G Co.'s Holliday & Ross 1, 8-6-2e, ta 2653 ft; Sharbrough 1, 28-6-1e, set 10-inch cas 88 ft, wo. Miss Pet. Co.'s Solvent 1, sw sw 14-5-1w, sd, wo at top rock 2710 ft; Baptist Orphanage 1, se se 28-6-1e, top Midway shale 2422 ft, wo cas, td 2475 ft. Hawkeye Gas Co.'s Webster 1, ne nw 15-5-1e, elev 269.6 ft, top Midway shale 2375 ft, set 6⅝ cas top chalk 2474 ft, casing parted, recemented, blg to test, td 2476 ft. Howard Oil Co.'s Jackson College 1, nw nw 9-5-1e, dk. Atkinson et al's Wiggins 1, nw ne 33-6-1e, dk. Kennedy et al's Fee 1, ne ne 34-6-1e, lcn. Gulf Ref. Co.'s McLaurin 1, 30-6-2e, dk. Cane River O&G Co.'s Kabbes 1, ne sw 15-5-1e, sp, dr 300 ft.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s, J. H. Keyes 1, nw ne 21-2n-10e, dk.

KEMPER COUNTY (De Kalb Dist.)—W. W. Jones' Rosenbaum 1, lcn not given, dk.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rigged up wo.

MADISON COUNTY (Jackson Dist.) — Miss. Pet. Co.'s Raymond 1, nw sw 32-7-2e, set 12½-inch cas in blue gumbo 706 ft, wo.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-13-19, sd in brown sand, wo 3007 ft. P. J. McAlpine's Cowart 1, 2-12-19, driving 12½-inch cas at 75 ft, td 85 ft. Associated Royalties' School Board 1, 16-15-17w, sd 60 ft. Amory Pet. Corp.'s Harris 1, nw nw 18-13s-17w, dk; Carter 3, se se 7-13s-17w, dr 630 ft.

RANKIN COUNTY (Jackson Dist.)—Jackson Royalties, Inc.'s, Pate 1, sw se 12-5-1e, top Midway shale 2294 ft. elev 268 ft, set 6⅝ cas 2379 ft, est 40 mil ft gas, td 2405 ft. Sabine O&G Co.'s Rankin Dev. Co. 1, sw ne 6-5-2e, dk. Love Pet. Co.'s Moore 1, 28-6-2e, sd 900 ft. Gulf Ref Co.'s Hamilton Est. 1, sw sw 4-5-2e, elev 284 ft, top Midway shale 2537 ft, top chalk 2620 ft, set 9-inch cas 2610 ft, td 2626 ft. Love et al's Brown 1, se se nw se 12-5-1e, top Midway shale 2310 ft, set 6-inch cas 2356 ft, dr in; Muse 1, se se 32-7-4e, dk. Pearl River O&G Co.'s Pate 2, se se 12-5-1e, top Midway shale 2336 ft, set 7-inch cas 2379 ft. Redmond et al's Graves 1, 12-5-1e, sp set 15½-inch cas 35 ft, dr 600 ft. Wallace O&G Co.'s Cobb 1, se ne 12-5-1e, dk pat.

WARREN COUNTY (Vicksburg Dist.)—Vicksburg O&G Co.'s Dornbusch 1, 8-18-15, sd 1350 ft. R. A. Moore et al's Clark 1, se se 31-16n-5e, dk.

WEBSTER COUNTY — Cumberland Oil Co.'s Henley 1, 15-21-11, ta 1865 ft.

WINSTON COUNTY (Louisville Dist.)—Mississippi Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, top Selma chalk 848 ft, tested dry thru ds, slight show gas 857 ft.

YALABOUSHA COUNTY—J. D. Collette et al's Blackmer 1, se nw 14-11-4w, fsh junk, td 2434 ft.

ALABAMA

HOUSTON COUNTY—J. R. Sealey's Fee 1, 13-1n-27e, changing from cable tools to rotary, td 3100 ft.

LAUDERDALE COUNTY — P. J. McAlpine's O'Neal Hrs. 1, 8-2s-13w, sd in white limestone, td 2525 ft.

MORGAN COUNTY—Albany-Decatur O&G Co.'s English 1, 6-6-4, fsh cas 4130 ft.

SUMTER COUNTY—B. W. Bates' Fee 1, 3-18-1w, ta 1200 ft; Fee 2, 3-18-1w, rig up wo.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd in limey shale 881 ft;

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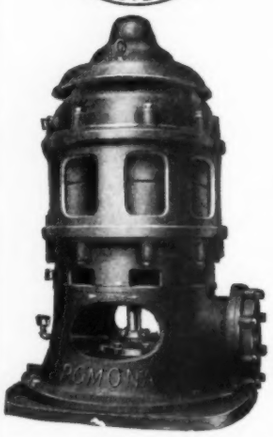

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TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, dr sand and dolemite 1983 ft.

NORTH CALIFORNIA

KERN COUNTY

BELRIDGE—General Pet.'s Berr 1, 30-28-21, dr shale 2100 ft. Ohio's Bloemer 1, 36-27-20, rig. Reward Oil Co.'s No. 1-A, 34-27-20, rig. Richfield's Belridge 1, 22-27-20, dr shale 5275 ft. Standard's McPhail 1, 36-27-20, rig. The Texas Co.'s Martin 1, 22-27-20, rigging up rotary. Union's Bacon 1, 27-28-20, lcn. K. C. Wallace's No. 1, 32-29-21, repairing rig, td 3775 ft.

BUENA VISTA HILLS—Federal Drilling Co.'s No. 1, 20-31-24, dr shale 1615 ft. Midland Exploration Co.'s No. 1, 34-31-24, lcn.

BUTTONWILLOW — Nordon Oil Corp.'s Salisbury 1, 7-29-24, cmt 6¼-in cas at 5025 ft, td 5065 ft. Superior Oil Co.'s KCL-1, 32-29-25, lcn.

DEVILS DEN—Standard's Alferitz 1, 14-25-18, dr shale 660 ft.

EDISON—Petroleum Securities Co.'s Johnson-Moss 1, 14-29-29, dr hard sand 3030 ft.

EL TEJON—J. J. Ritchie's No. 1, 33-11-19, dr hard shale 4600 ft.

PATTIWAY — H. A. Bardeen's Ramsey 1, 10-10-23, sr to cmt 6⅝-in cas, td 4175 ft.

SEMITROPIC—Shell's Williams 1, 17-27-23, dr shale 7185 ft.

SHALE HILLS—Rio-Cal. Pet. Co.'s No. 1, 2-27-18, dr shale 2270 ft.

WEED PATCH—Mohawk Oil Co.'s Wharton 1, 32-30-39, rigging up rotary. Shell's Porter 1, 29-30-29, dr 250 ft; Porter-Day 1, 29-30-29, dr shale 5860 ft.

SANTA BARBARA COUNTY

CAMPBELL'S POINT — Bolsa Chica Oil Corp.'s Augur 191-1, 24-4-9, dr shale and streaks of sand 3075 ft.

GATO RIDGE—Barnsdall's Tegnazzini 1, 9-8-32, dr shale 5165 ft.

GOLETA—General Pet.'s More 3, co 2460 ft. George W. Johnson's Duncan 1, fsh for drill pipe, td 3970 ft.

LOS ALAMOS—N. S. Wilson's No. 1, 2-7-33, dr out cmt below 15½-in cas, td 1415 ft.

ORELLA—General Pet.'s Erburu 8, 32-5-30, dr oil sand 2533 ft; Erburu 9, lcn; Erburu 10, grading for rig.

POINT CONCEPCION—Standard's Gerber 1, dr hard shale 6405 ft.

PURISIMA — Vaqueros-Major Oil Co.'s Union Annex 2, 6-7-33, completed at 3210 and shut in; Union Annex 3, rigging up rotary; Union Annex 4, lcn.

SANTA MARIA—O. C. Field Gasoline Co.'s Norswing 1, 8-9-33, sd 5568 ft; Bradley 1, 4½-in cas re-cmt 5170 ft, td 5267 ft. Western Gulf's Bradley 1, 5-9-33, dr shale and hard sand 4130 ft.

VENTURA COUNTY

HOPPER CANYON—Rio Grande's Lankershim 1, 13-4-19, fsh for core barrel, td 1820 ft; barrel lost at 915 ft.

PIRU — A. N. Macrate's Torrey-Eureka 1, 32-4-18, rigging up rotary.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A-2, 23-3-24, fsh for drill pipe at 7485 ft, td 7520 ft.

SANTA MONICA MOUNTAINS—Olympic Corp.'s Calabasas 1, 18-1-17, fsh for drill pipe, td 5670 ft.

SANTA PAULA — George C. Thompson's No. 1, 15-4-21, cmt break in 8¼-in cas at 500 ft, td 2360 ft.

SESPE — Superior's Kirtlan 1, 15-4-21, dr shale 2150 ft.

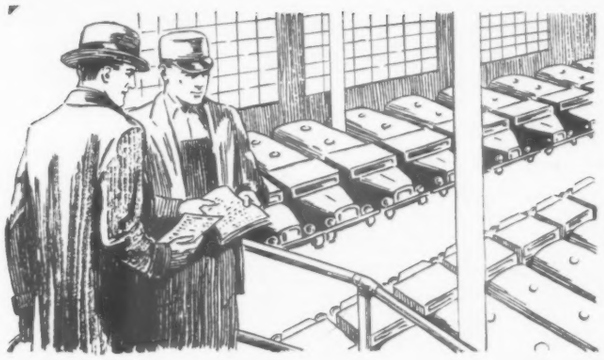
SOUTH MOUNTAIN — Ring Pet. Corp.'s Converse 1, will deepen from 4910 ft.

VENTURA—Prairie Oil & Gas' Sexton 1, 30-3-22, 9-in. cas cmt 3727 ft, td 7520 ft.

MISCELLANEOUS

FRESNO COUNTY — Petroleum Securities Co.'s Gatchell 1, 28-20-16, lcn. Carruthers Oil & Land Co.'s Barritt 1, 4-17-20, rigging up rotary. Associated's Mitchell-Jacalitos 1, dr shale 1000 ft.

KINGS COUNTY—Knudsen & Smith's No. 1, 36-23-17, lcn. Friend & Fiske's No. 1, 11-23-19, 8¼-in cas re-cmt 930 ft, td 97[illegible] ft.



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Murphy Oil Co.'s Brennan 1, 20-23-20, dr hard sand 250 ft.

MENDOCINO COUNTY — Twin State Oil Co.'s Soldani 1, 14-12-17, dr hard sand 4900 ft.

SAN LUIS OBISPO COUNTY—C. J. Schilling's Potter 1, 1-29-12, sd 855 ft. Paso Robles Synd.'s Emerick 1, 34-27-11, sd 3910 ft. Firemen's Pet. Corp.'s Carpenter 1, 13-32-13, rig. Continental's Hellman 1, 26-25-11, rigging up rotary. Pismo Dome Oil Co.'s Pricco 2-A, 5-31-13, dr shale 3005 ft. Texas Pacific Coal and Oil Co.'s No. 1, 25-32-14, fsh for drill pipe 4430 ft.

TULARE COUNTY — Big Four Drilling Co.'s No. 1, 29-32-27, perforating 4¼-in cas, td 4330 ft. Ducor Pet. Co.'s Zimmerman 1, 14-24-27, fsh for tools 2180 ft. Dennis Oil Co.'s No. 1, 29-23-28, dr hard sand 600 ft. Kettleman East Side Trust's No. 1, 21-22-27, dr gray sand 850 ft. Larson Oil Co.'s Best 1, 11-23-27, dr shale 1166 ft. Mills and Wilson's No. 1, 35-22-27, co 913 ft. Miller & Sylvan's No. 1, 11-23-27, dr shale 815 ft. Roetner Oil Co.'s No. 1, 34-22-27, dr shale 938 ft. Turk & Compbell's Nevins 1, 34-22-27, dr shale 1335 ft. Western Oil & Exploration Co.'s Porch 1, 21-22-27, rig; Gardiner 1, 35-22-27, co 1030 ft. Inland Valley Oil Co.'s Smith-Rea 1, 24-17-24, cmt 6⅝-in cas at 2060 ft.

YOLO COUNTY—George F. Getty's Guinda 1, 23-12-3, co 2007 ft.

SOUTHERN CALIFORNIA

Completion

PUENTE HILLS—
Western Gulf Oil Co.'s Diamond Bar 1 ..... * 6828

ATHENS—McKeon Oil Co.'s No. 1, rigged up.

BELL—Cudahay Community Oil Assn's No. 1, rigged up.

CORONA—Western Gulf's Abacherli 1, sand 300 ft.

EL MONTE—Los Gatos Oil Co.'s Sing 1, dr shale 2175 ft.

FULLERTON — Standard's Bastanchury 1, plugging to 6845 ft, td 7040 ft.

HERMOSA — California-Ventura Oil Co.'s Sadler 1, running 15½-in cas, td 2520 ft.

LA HABRA—Union's Sansinena 11, dr shale 5088 ft, cored oil sand at different levels.

MONTEREY — Celito Oil Co.'s Jepson 1, bailed water and trace of oil, td 5275 ft.

NEWHALL—Lone Star Western Oil Co.'s Trumble 1, rigging up to deepen from 300 ft. National Securities Co.'s Seeple 1, dr shale 2220 ft. Section 31 Oil Co.'s Farrier 1, dr shale 1550 ft. Southern California Drilling Co.'s Needham 4, dr shale 3385 ft. York & Smullin Oil Co.'s Clampitt 5, sp.

NEWPORT—Standard's Irvine 1, dr shale 2575 ft.

PLAYA DEL REY—Olympic Oil & Realty Co.'s No. 1, sdtr iron 3535 ft. West Port Oil Co.'s No. 1, dr shale 4435 ft.

POMONA—Lamona Oil Ass.'s No. 1, dr hard rock 961 ft.

PUENTE HILLS—Arden Oil Co.'s Bidart-Rowland 1, will deepen from 2895 ft. Bardeen Oil Co.'s Barnadette 1, rig. Marcel Pet. Co.'s Marcel 1, dr hard sand 3090 ft. Rio Hondo Pet. Co.'s Rowland 1, will deepen from 3726 ft.

SAN FERNANDO—Shell's Andrews 1-1, dr hard sand and shale 5555 ft.

SANTA FE SPRINGS—Union's Orchardale 1-1, dr shale 5535 ft.

SAN JUAN CAPISTRANO—Okay No. 2's Foster 2, dr shale 4688 ft.

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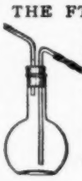
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County Maps
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Oil Field Machine Shops
Office: Vinton, Louisiana
Shops at: Vinton, La., Orangefield, Texas
Specialists in Repairing Oil Field Equipment
E. I. W. Side-Track Milling Tools.
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TULSA, OKLAHOMA
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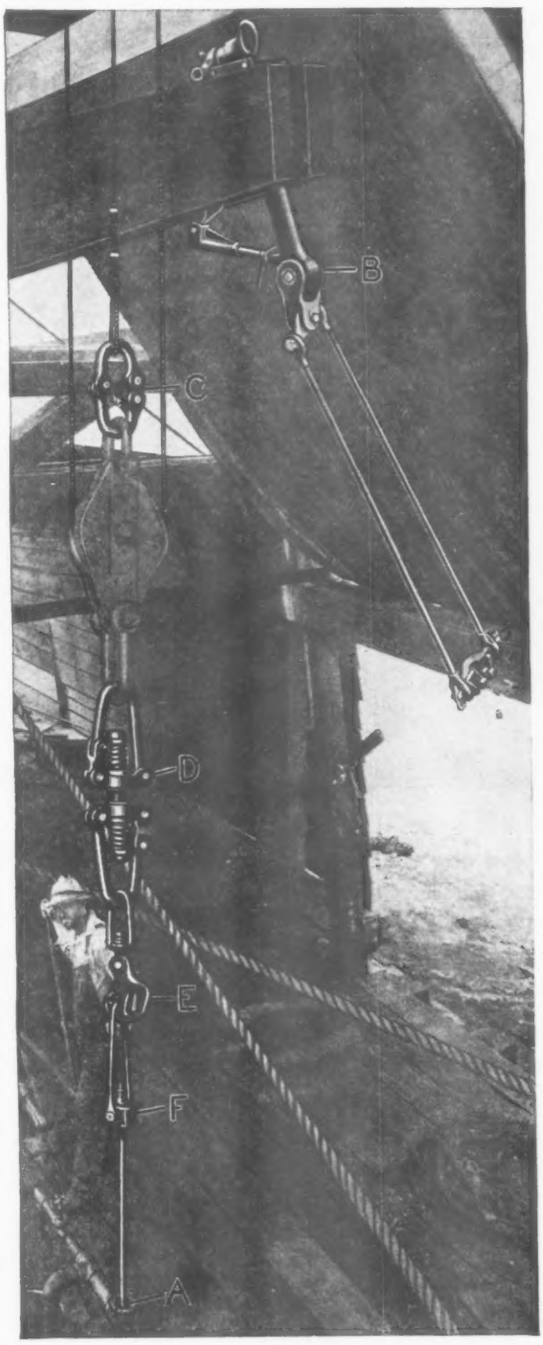
SURVEYS
ESTIMATES OF OIL RESERVES
AN EXPERIENCED OIL FIELD ORGANIZATION

RATIGAN
Rod and Tubing Tools



An ideal combination for rod pulling: (a) No. 28 Bell Nipple. (b) No. 24-A Universal Oil Bath Beam Hanger suspended out of the way for well pulling. (c) No. 14-C "C" Link—large. (d) No. 31 Spring Swivel Tubing Link. (e) No. 27 Safety Sucker Rod Hook. (f) No. 9 Safety Sucker Rod Elevator. Catalog of Ratigan Tools mailed on request.

J. P. RATIGAN

Manufacturer

1213 Santa Fe Avenue — Los Angeles, Calif., U. S. A.
New York Office — 30 Church St.
Cable Address—"RATIGRIP"
Los Angeles and New York — All Codes

PERMISSIBLE
TANK GAUGERS' MASKS

After months of arduous research in our laboratories we are now able to offer a Permissible, Bureau of Mines Approved Canister on All M-S-A Tank Gaugers' Masks for Protection against Organic Vapors and Acid Gases, including Deadly Hydrogen Sulphide Gas from Sour Crudes and Distillates. This announcement is of special importance to the Oil Industry.

TWO TYPES OF MASKS AVAILABLE
DETAILS ON REQUEST
USE THE COUPON

"Everything for Mine and Industrial Safety"

Mine Safety Appliances Co.

Braddock, Thomas and Meade Sts., Pittsburgh, Pa.

MINE SAFETY APPLIANCES CO.
PITTSBURGH, PENNA.

Without obligation, please send me copy of Bulletin No. 104 on M-S-A TANK GAUGERS' MASKS.

MY NAME_____

POSITION_____

COMPANY_____

ADDRESS_____

A HUNDRED Miles South of McCamey - - and More than a Mile Down

Mid-Kansas Oil & Gas Company's M. H. Goode No. 1, in Terrell County, Texas. The men, left to right: H. G. Alston, Union Wire Rope Corp.; Albert Flaherty, Southern and Flaherty, Drilling Contractors; Kelly Hawker, Driller; J. W. Wineman, Driller.

The above scene is at a well drilling at about 5300 feet, approximately 100 miles south of McCamey; Southern and Flaherty, contractors . . . . . The truck men that transported this heavy reel of 1" x 10,000' UNION Drilling Cable into the wilds of West Texas had quite a trip to make. Which was good reason for taking in a good drilling line - - one that could be depended upon to do the job . . . . UNION Wire Lines for the oil industry are always dependable because they are correctly designed by practical oil men and built by precision methods which insure absolute uniformity.

UNION Wire Lines for the oil industry conform to A.P.I. specifications as marked on each reel.

TRADE MARK

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Oil Country Sales and Export Offices: 338 Kennedy Bldg., Tulsa

Branch Office and Warehouse: Portland, Ore.

Factory: 21st and Manchester, Kansas City, Mo.

JARECKI MANUFACTURING COMPANY

Mid-Continent and Eastern Oil Field Distributors . . . Stocks at All Stores

UNION WIRE LINES

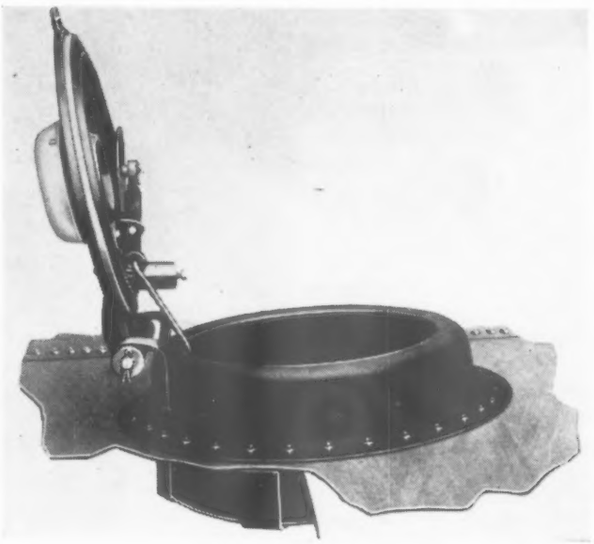
New Equipment for the Field

Machinery - Tools - Catalogs - Books

New Thief Hole

COLUMBIAN STEEL TANK COMPANY

Columbian Steel Tank Company, Kansas City, Missouri, is marketing a new balanced valve thief hole that automatically opens under 2½ to three ounce inside pressure and provides a large air inlet with less than ½-ounce vacuum pressure.



Columbian Thief Hole

The thief hole is circular and the opening is 14 inches in diameter with a bucket shelf inside which permits the thief operator to take his samples inside the tank proper. The lid weighs 35 pounds and raises up under sufficient pressure. The air inlet operates with a valve and counter weight which requires virtually no pressure to open. This same valve, however, when under inside pressure is pressed firmly against the inlet opening making a tight seal. The mechanism is without springs or other working parts which could possibly get out of order.

This product of Columbian Steel Tank Company is available from distributors of this organization which are located in all active oil fields.

Clutch Pulleys and Couplings

HILL-CLUTCH MACHINE AND FOUNDRY COMPANY

Hill-Clutch Machine and Foundry Company, 6400 Breakwater Avenue, Cleveland, is marketing the new "Hill-Pulvis" line of clutch pulleys and clutch couplings, which are designed to offer unusual advantages in the starting and handling of heavy loads; they are automatic both in pick-up and in release, and thus keep the load on the power unit within adjustable, predetermined limits.

Because of these features, the "Hill-Pulvis" clutch is particularly recommended for direct-connected or belt drives operated by electric motors. Not only can the regular type of motors be used instead of the more costly slip-ring or high torque types, but also in many cases a decidedly smaller motor and less expensive switchgear are required. In belt drives, the saving through the use of lighter belting is an important item.

The operating principle of the clutch is simple and unique. There are two main parts—an inner Rotor carrying impeller blades having orifices at the points where they are attached to the shaft; and an outer shell with serrations set lengthwise all around its inner face. The clearance between the impeller blades and the serrated shell-surface is very small. A certain definite quantity of chilled steel shot is placed in the shell, and the two ends of the clutch are closed by dustproof snap-ring holding plates. The impeller portion is connected to the drive side of the clutch, and the outer shell to the machine to be driven.

When the clutch is at rest, the chilled shot lie at the bottom of the shell. On starting the motor, the impeller blades revolve, driving the shot before them over the serrated surface. Part of the shot escape through the impeller orifices, and part are thrown outwards against the serrations by centrifugal force. As the motor speed increases, however, more and more shot are forced outwards, thus gradually increasing the clutch action. Finally, when the motor has attained full speed, all the shot are tightly packed ahead of the impeller blades and transmit the full power to the driven element of the clutch.

In the event of an overloading of the driven machine, its speed decreases. This at once causes the packed shot to slip until safe balance is reached. Thus the load on the motor can never exceed that for which the clutch has been set. The slipping point is determined by the size of the charge of shot within the clutch, and may be set with great accuracy. A telltale spring cam engaging with pins on the outside of the impeller unit affords an audible clicking signal which ceases as soon as the clutch is up to speed.

"Beaver" Pipe Cutter

THE BORDEN COMPANY

The Borden Company, Warren, Ohio, has introduced the new "Beaver" 2½-inch to four-inch square-end pipe cutter for threading one to two-inch pipe. The company also is introducing two new "Beaver" three-way die stocks, for smaller sizes of pipe.

This tool incorporates the popular Beaver principle of self-feeding knives—is gear driven—and has a driving pinion in front as is the case with the companion tool, the Number 41 Beaver die stock. This makes for easy interchangeability between pipe cutter and die stock when used with power drives.

A special grade of nickel semi-steel is used in the main housing and cover plates—insuring strength and rigidity.

The outstanding feature is the utter simplicity of the tool—and the fact that it does not require expert knowledge to operate it. A single wrench is used for centering the tool on the pipe by means of centering V-blocks and the same wrench is used to place the knives under compression. In case this socket wrench is lost, any standard wrench can be used.

The knives are of the well-known Beaver design with a guide running ahead of the cutting edge to prevent breakage.

Operated by the new Beaver power drive with universal

NEW EQUIPMENT FOR THE FIELD

motor, the Number 104 eaver square-end pipe cutter cuts off four-inch pipe in approximately 2½ minutes—smaller sizes in proportion.

This tool is made without intricate parts and because of the special metal used, should give years of service without any attention.

Morris Well Cleaning Process

THE MORRIS COMPANY

The Morris Company, with temporary offices in the Sam Houston Hotel, Houston, has introduced a new device and process for cleaning well screens and oil formations in open holes, substantially increasing the production of old wells, or wells in which screen or formation has become clogged. The new process already has a number of records of increased production to its credit, and the company is contracting many well cleaning jobs with Gulf Coast operators. As rapidly as possible, field service by experts will be made readily available in all sections of the oil country.

The Morris well cleaning process consists of compressing carefully compounded gasses into a tubular container made of highest quality seamless steel tubing, measuring about 20 feet long. These can be run in the hole singly, or in series of two, three or more. At the head of the container, or cartridge as it is called, a percussion cap is exposed. When this is struck by a weight dropped inside the tubing from the derrick floor, the gasses inside the cartridge are exploded.

The cartridge has a series of six deeply milled grooves running its entire length from end to end, spaced equally about its circumference. Just enough metal is left in the bottom of these grooves to hold the compressed gasses safely. When the cartridge has been properly charged for the particular well in which it is to be run, it is lowered into the screen on the regular tubing, and packed off at the top of the screen. A weight is then dropped and the percussion cap struck. When the gasses in the cartridge explode, the thin wall of metal in the bottom of the grooves gives away, permitting the expanded gasses to enter the screen or oil formation with sufficient force to clean thoroughly all openings or formation pores of accumulated scale, rust, corrosion, caked sand, heavy b.s., etc. Oil is also forced back into the pores of the formation, dissolving paraffin, b.s., etc., and opening them up for the free flow of oil.

The cartridge retains its tubular shape after the explosion, and is so constructed that absolutely nothing can be left in the hole. After the explosion, it is pulled from the hole and disconnected. The working barrel is then run in, rods and plunger replaced, and the well put back on the pump. Very little time is required, and all necessity for rigging up a draw-works, mud pump and usual equipment for cutting and pulling screen is eliminated. The cost of thoroughly cleaning a well by the Morris Process is very low, as compared to the cost of pulling a screen and running a new one.

Diamond Rubber Company, Inc., Akron, Ohio, has issued a new catalog of belting, packing, hose, matting and miscellaneous items for industrial use. The catalog is fully illustrated and contains descriptive matter giving details of each piece of equipment. An interesting feature of the publication is the cover and mailing envelope which were printed from rubber engravings, hand-cut from sheet rubber manufactured by the company. Copies of the catalog pages have also been specially produced of correct size and shape for inclusion in loose leaf catalogs carried by distributors' salesmen. A copy of this catalog may be procured upon request to the company.

"Increasing the Recovery of Petroleum"

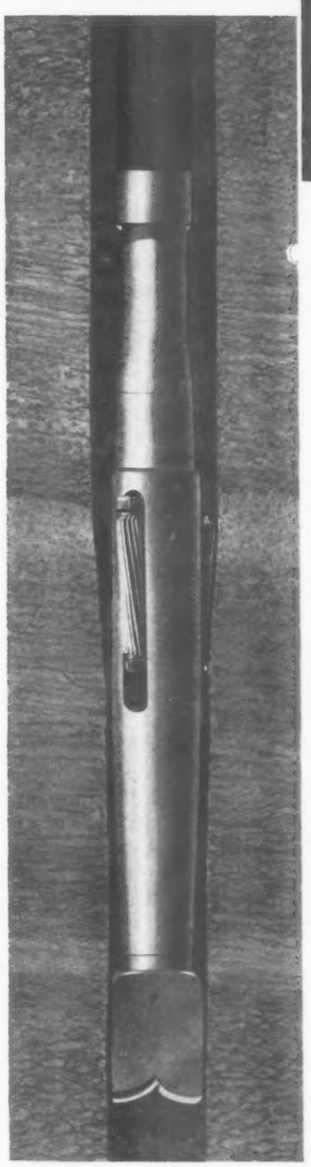
"Increasing the Recovery of Petroleum," by Wentworth H. Osgood, inspector, U. S. Naval Reserve, Number Three, in two volumes contains a certain amount of personally collected data on the newest and latest information on oil recovery, together with quotations from technical society papers, excerpts from publications of government technical bureaus, contributions from field men on both the theory and practice of oil recovery, and articles from technical journals that constitute one of the most complete and detailed studies yet published on this particular phase of the oil industry. From this vast amount of interesting material the author has developed a discussion bordering on the non-technical which will give the commercial man a comprehensive understanding of the action of oil under the ground and the best methods for extracting the oil with a minimum of waste and maximum efficiency of operation.

Because of his close contact with the actual work which he is discussing and the exhaustive study which he has made of the subject, Mr. Osgood demonstrates very clearly in his presentation the thorough knowledge which he has of the subject of oil and gas recovery. His first study deals primarily with a generalization of the increasing recovery of petroleum, while the second goes into much detail concerning the air and gas lift methods. Throughout the two volumes illustrations are given showing the practical application of simple formulae to the producer's individual problems, and further explanation is made by the use of working maps, graphical well logs, production records, structural cross-sections, surface maps and geological maps. Conclusions of the author stress the need for conservation of petroleum and show the effect of production upon the utilization of the natural energy by the gas-oil ratio that exists during the productive life of the well.

Headley Emulsified Products Company, Franklin Trust Building, Philadelphia, has issued Bulletins 330 and 430; the former describes the company's emulsified asphalts, the latter the company's asphalt base aluminum coating. Headley emulsified asphalts are used for waterproofing, dampproofing and general protective coating purposes. This bulletin tells about the company's engineering service and gives complete details, descriptions, listings and illustrations of this product. Bulletin 430 covers the subject of asphalt base aluminum in a like manner. Either, or both bulletins will be sent upon request to the above address.

Refinery Supply Company, Tulsa, has issued its bulletin No. 15, containing a description of Ac-me and R. S. specialties in scientific and power plant equipment. Copies of the bulletin may be obtained from the company at 621 E. Fourth Street, Tulsa.

UNDERREAM TO SAVE



Underreaming with the GRANT Underreamer assures many savings which cut the cost of drilling and provide greater production.

A hole that is not underreamed means danger from water troubles. It costs as much to pump water as oil and there is no market for the water. The GRANT will increase the size of the hole to permit use of larger size pipe and will leave ample room around the couplings for a good body of cement—thus assuring a *permanent* water *shut-off*.

Wells underreamed through the oil sands with the GRANT Underreamer have produced four and five times more oil than before underreaming. The tool removes all obstructions from the walls of the hole and you get *all* the oil.

And if you want a Reamer to true up the hole—don't buy an extra tool. For the GRANT Underreamer can be converted into a Straight Reamer.

Full details on request from Underreamer headquarters

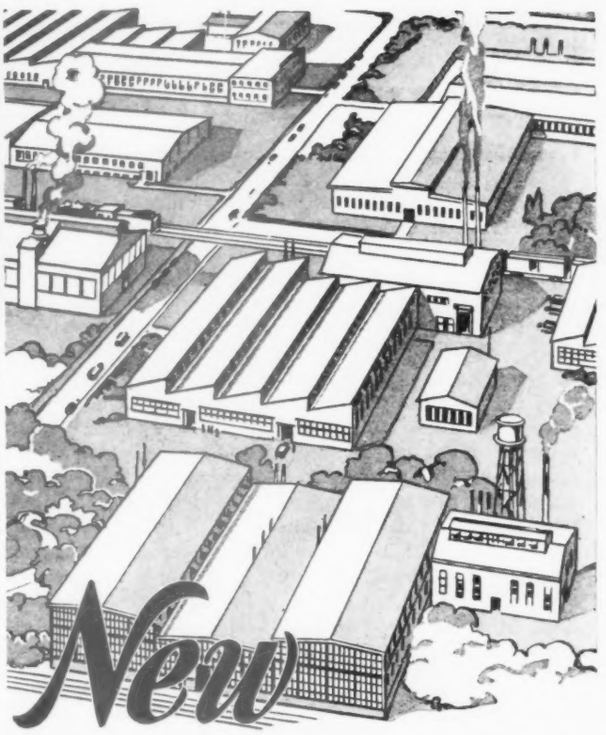
Grant Oil Tool Co.
2042-44 East Vernon Avenue
Los Angeles, California, U. S. A.

GRANT UNDERREAMER

DISTRIBUTORS:
Oil Well Supply Company
The National Supply Companies
Continental Supply Company
The Republic Supply Company of Calif.
Lucey Products Corporation
American Steel Export Co. New York

LINER PULLERS
CEMENT HEADS
ENDURANCE BITS
STRAIGHT HOLE GUIDES

USED WHERE PERFORMANCE COUNTS



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In all Types and Sizes

NEW WALLS, NEW WINDOWS, NEW ROOFS, NEW DOORS give greater utility, flexibility, and quality to Truscon Buildings. Low initial cost added to these features insures the greatest possible value obtainable in a building investment.

Truscon cooperates fully with architects, contractors, builders and owners to develop the most satisfactory building for individual requirements.

Whatever the size or type of your building, write, without obligation, for our recommendations, quotations and catalog.

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO
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Send without obligation full information on buildings to be used for_____ approximate floor space_____ sq. ft. No. of stories high_____ Length_____ ft. Width_____ ft. Height_____ ft.

*Name*_____

*Address*_____ O W -3

Manufacturers and Supply Dealers Notes

A survey covering practically every oil field in the world, has just been completed by W. W. Cole, manager of foreign sales for Byron Jackson Company. The trip which took more than a year, was sponsored by the Byron Jackson Company in the interest of a better understanding of the conditions, facilities and needs of foreign operators.

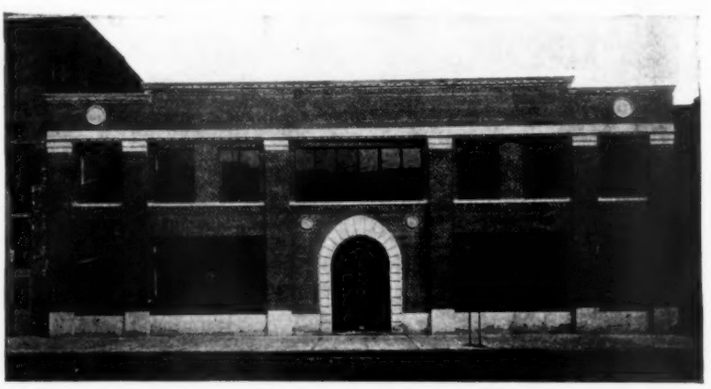
Mr. Cole reported that the hospitality accorded him at all places en route was most cordial. Most foreign operators, he said, have the modernizing of their equipment in mind at all times, and are getting surprisingly good results with the native labor. Field executives were found to be remarkably up to date in their knowledge of latest developments. Mr. Cole was interested to find that Byron Jackson equipment is in daily use in every oil field in the world. Starting from San Francisco he journeyed to Japan, thence to Straits Settlements, stopping at Singapore. After thoroughly covering Dutch East Indies, Borneo, Sumatra and Java, he investigated the oil fields of Burma and India, making a side trip into the Himalayas and the Khyber Pass, famous in history, up to the border of forbidden Afghanistan. Persia and Iraq next claimed his attention, the latter appearing to hold great potentialities for profitable production. Traveling through Europe he visited the oil fields of Roumania, Poland and Germany. After a brief stay in London, he sailed to South America and thence back to Los Angeles. He was accompanied on his journey by Mrs. Cole, and both enjoyed the experience immensely.

Chicago Pneumatic Tool Company has completed construction of one of the finest and most completely equipped service stations in the portable tool industry at 570 East Larned Street, Detroit. The building is reinforced concrete, faced with tapestry brick in assorted shades as a pleasing background for the limestone trim. The 75-foot front has two large plate glass display windows, each 13 feet wide by seven feet high, containing the various CP products, illuminated at night by concealed display lights.

The building contains approximately 12,000 feet of floor space with two stories and a basement.

The east half of the first floor of the building serves as a warehouse for compressors, engines and other heavy machinery, while the west half houses the parts storage, a sound proof test room, a 35-foot repair bench, shipping and receiving benches, delivery counter, etc.

The office occupies the front half of the second floor, the balance being devoted to storage of complete tools. The equipment is modern throughout. This is one of 20 similar fully equipped and stocked service stations maintained by Chicago Pneumatic Tool Company in important cities throughout the United States.



Chicago Pneumatic Service Station at Detroit

Link-Belt Company, 200 South Belmont Avenue, Indianapolis, has issued a 32-page comprehensive data book devoted to Promal chains. Promal is a new, stronger, longer wearing metal for cast chains, for power transmission and conveying service, recently developed by this company.

The new book, No. 1050, describes Promal chains, both plain links and attachments, for use where the inherent qualities of Promal are desired. Dimensions, strength, list prices and weights, are given in this data book.

The company will send gratis, a copy of the data book upon request to the above address.

Ohio Gear Company, Cleveland, has issued a 96-page catalog of small and medium size gears. Formulas and information in the design and adaptation of gearing and reduction units of the various types are given in this booklet. The catalog also includes analyses of typical commercial alloy steels, standard heat treatment methods and a simple method for figuring weights of different shaped bars of various materials. Several new speed-reducer types are also described and listed.

J. A. Kammerdiner, 237 South Highland Avenue, Los Angeles, has issued an eight-page booklet on the new improved Kammerdiner rotary jar. The booklet describes the material used in these rotary jars, carries illustrations, and describes the operating principles of the jar. A copy of this booklet will be sent upon request to the above address.

Taylor Forge & Pipe Works, P. O. Box 485, Chicago, has issued a four-page leaflet describing the Taylor forged steel butt welding flanges for welded lines. Several sizes are shown in detail, and in addition, the proper design of large flanges can easily be determined by use of the chart, a part of the booklet, which graphically shows the solution of the Taylor-Waters formula. Copies of the booklet may be procured upon request to the company.

Hercules Motor Corporation, Canton, Ohio, as an aid to distributors and dealers in making recommendations to customers, issued two new bulletins containing advice as to the selection of the proper type of Hercules power plant for any given requirement.

Lewis-Shepard Company, Boston, has issued a new catalog on its new and complete line of standard and special floor trucks. Besides these trucks, which are arc-welded at every joint, the company has illustrations of the numerous kinds of trucks, jacklifts, stackers, platforms and racks with explanations of the kinds of work they are to be used for. Copies of this bulletin may be had upon request to the office at 125 Walnut Street, Watertown, Massachusetts.

No interference if you have a fishing job

Bettis Protectors and Drill Stabilizers are the only protectors placed on drill pipe that can be slipped over the coupling in an emergency and will always float to surface on top of the mud.

No knobs
No hinges
No pins
No baling wire

Made solely of finely compounded rubber.

Now a necessity in every rotary field.

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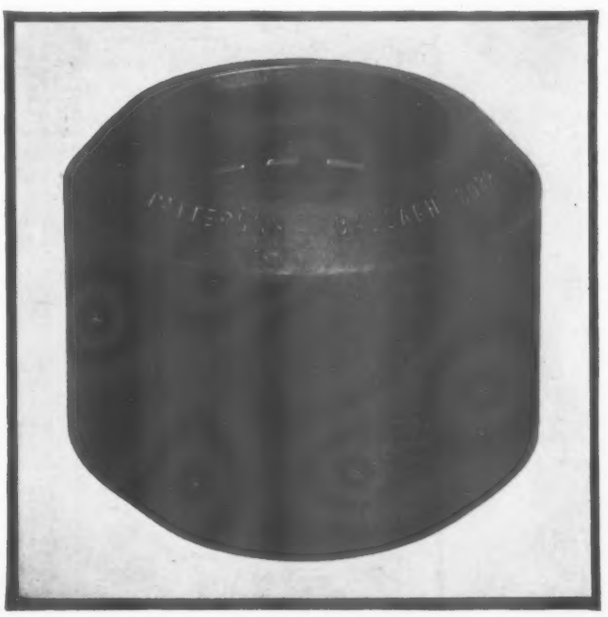
Oklahoma Distributors:
Bailey & Becker Company, 410 Thompson Bldg., Tulsa

New York Office: 39 Cortlandt St.

ALL-RUBBER PROTECTION

The important advantage



FULLY PATENTED

BETTIS PROTECTORS

"Best bet yet"

SQUEAKS FROM THE BULL WHEEL

Bounder—Don't stop me; I'm going into this shop and buy a new cover for my typewriter.

Rounder—But that is a fur shop.

Bounder—Well?

Broccoli—I feel like 30 cents.

Spinachi—Well, everything is higher than it used to be.

Why so many cars in front of Bojum's house? Is there a funeral or something?

No, he told someone confidentially he was in the market for a new automobile.

"Why don't you want me to marry your sister, Tommy? I thought you liked me.

"I do; that's why."

And how long were you a prisoner?

Five years.

But the war didn't last five years.

Who's talking about the war?

Parse the word kiss.

This word is a noun, but is usually used as a conjunction. It is never declined, and more common than proper. It is not very singular, in that it is usually used in the plural. It agrees with me.

Is it true that Miss Bargain Hunter is married?

I'm not sure, but they say she has a husband home on approval.

"My dog took first prize at the cat show."

"How come?"

"He ran away with the prize cat."

Boss—You've been away over half an hour and only had to go around the corner.

Office Boy—I know, sir, but a man dropped half a dollar in the gutter.

Boss—And did it take half an hour to find it?

Office Boy—No, sir, but I had to wait till the man went away.

Adelaide—Don't tell anybody, but see this ring? Clarence slipped it on my finger last night.

Cornelia—Yes, it's nice looking, but it will make a black circle around your finger before you've worn it a week. It did on mine.

Did you hear Baumblower was mobbed my his neighbors merely for phoning?

No, you don't mean it!

Yes, he was saxophoning.

Did you ever notice that a loud talker is generally an ignorant person?

Well, you needn't shout so; I'm not deaf.

Angus—If you've spotted the man who stole your car, why don't you get it back?

Sandy—I'm waiting for him to put on a new set of tires.

Did you notice the beautiful pink dress on the woman in front of us this morning?

Er—no. I'm afraid I was dozing most of the time.

Well, a lot of good the service did you!

Movie Director—Now, here is where you jump off the cliff.

Nervous Actor—Yeah, but suppose I get injured or killed?

Movie Director—Oh, that's all right. It's the last scene in the picture.

"Would you be pleased if you had such perfect teeth as Mary?"

"Well, I should smile."

My company pays me what I am worth.

Well, that's one way for them to keep down their overhead.

Is your wife careful about keeping the bathroom clean?

Yes, she won't even let me sing any of those army songs in it.

She was sitting in a dark corner. Noiselessly he stole up behind her, and before she was aware of his presence he had kissed her.

"How dare you," she shrieked.

"Pardon me," he bluffed, readily. "I thought you were my sister."

"You dumb ox. I am your sister."

A grim man entered one of the hat stores this week and said he wanted a derby. He tried on several, making strange faces and working his jaws up and down. He asked for bigger and better derbies, and tried them, still grimacing. "Nup," he said at last to the astonished clerk. "They'd all move up and down when I eat." Out he walked.

"My good man, you had better take the street car home."

"Sh' no ushe. Wife wouldn't let me keep it in the houshe."

"Mary has just married Bill Hendricks."

"Bill Hendricks? Impossible! Why, he's the man she was engaged to."

Diner—Waiter, will you put a sample of this gravy in a small bottle for me?

Waiter—What for, sir?

Diner— Iwant to get a vest to match it.

A time saver on any lease

THE APPLEMAN GUMBO BIT is designed to fit the needs of those efficient operators who appreciate the value of hours or days saved in drilling a well. On any lease where the APPLEMAN BIT is used you will find that the unusual speed of this bit is saving money every day for the oil man.

The remarkable speed of this bit has made for it a reputation throughout the ranks of oil operators and drillers that singles it out as an outstanding leader where *time saved means dollars saved.*

Ask the man who uses them or write for complete information today.

B. K. APPLEMAN
BEAUMONT, TEXAS

You will want complete information on the new SULLIVAN "50" CORE DRILL

Note these advantages:

1. Capacity—production work to 1500 ft. Structure testing to 3000 ft.
2. Reliable and accurate core.
3. Can be operated with diamond bit if desired.
4. Perfect control through hydraulic.
5. Has flexibility of "Rotary."
6. Uses any rotating type of bit.
7. Reduces cost of rigging up.
8. Is moved without disassembly.
9. Will drill through smaller casing than "Rotary" or "Cable" Tools.

The Sullivan "50" is a high grade machine built to run continuously. It is backed by more than 50 years experience in the manufacture of Core Drills.

Send for Booklet 85-M.

SULLIVAN

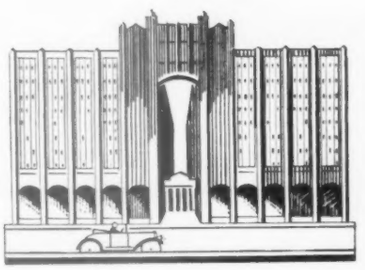
Sullivan Machinery Company

713 Wrigley Bldg., Chicago

Agent for Oklahoma and Kansas

GEO. E. FAILING, Enid, Oklahoma

A Temple of Commerce » » »



Has been built in Houston, Texas, for the housing of distributors and jobbers . . .

Offices, display rooms, large sales rooms, stores and warehouse space available in almost any size or arrangement. The value of its location and facilities is apparent when the number of oil field supply houses located in it is considered.

MERCHANTS AND MANUFACTURERS BUILDING

» » » at Main Street Viaduct « « «

HOUSTON, TEXAS

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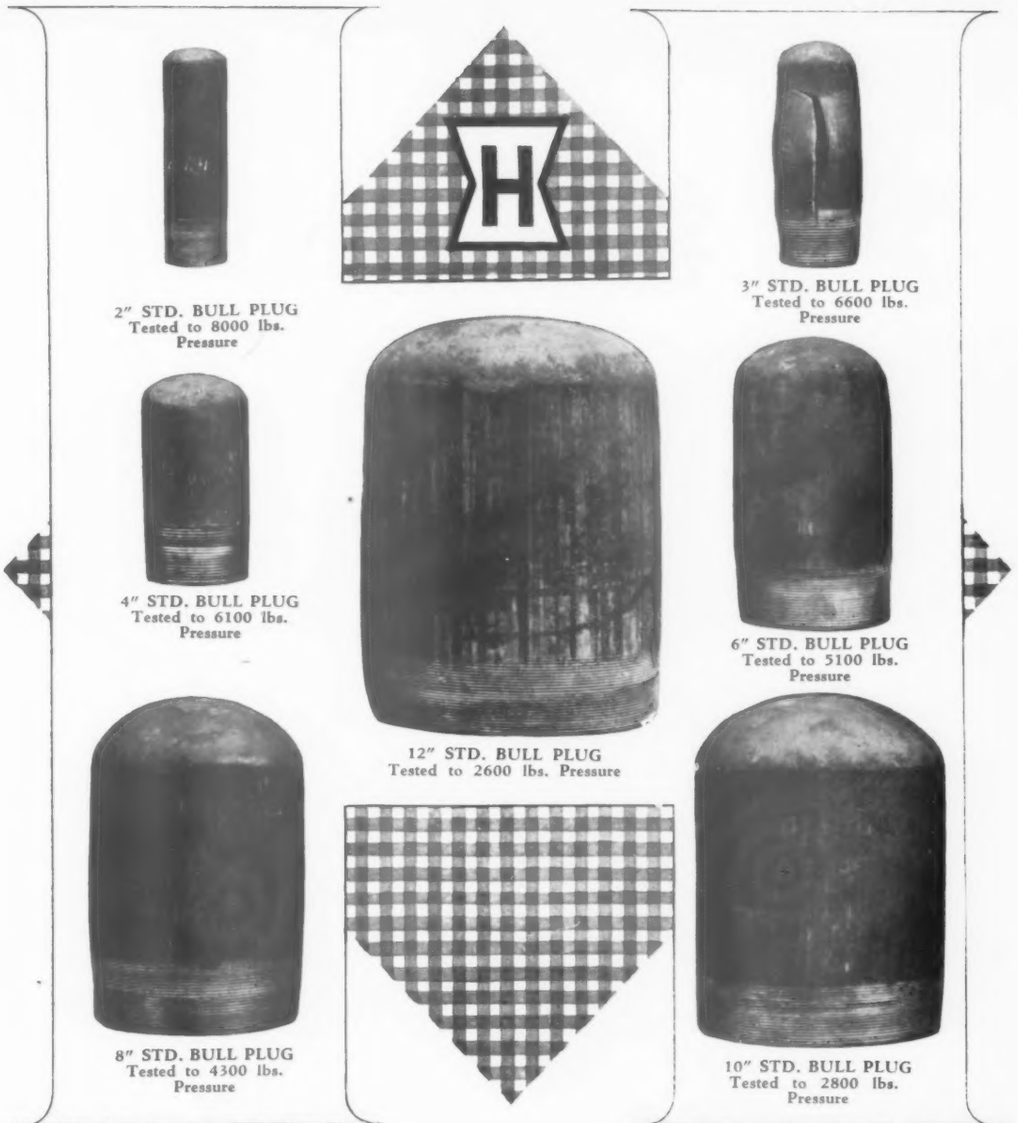

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